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Address.

SIR JAMES PAGET AND PAGET'S DISEASE.*

By Elliott C. Cutler, M.D., Boston.

I. PAGET'S DISEASE.

My claim to talk on Paget's disease of bone, does not rest with any exceptional interest I may have, as a medical man, in this affection, for it does not seem to be within the realms of possibility that the successful treatment of this disease shall come through surgical efforts. But, as to all students of medicine imbued with sufficient curiosity and the values of a historical background, diseases appeal which are named after their discoverers, so in this instance, because of the name, I was led to a study of the man and his times. The effort was a thousand times repaid, for James Paget is one of the great men in modern medicine. I say modern, for he lived through the years when anesthesia was discovered and had as contemporaries Pasteur and Lister.

And to talk on Paget I have full right, because he was, first, a great surgeon, though much of his greatness was obtained because of his scientific efforts, his teaching, and his literary gifts. I found his life tremendously stimulating and interesting, and indeed it constitutes an ideal whose study will be of vast benefit to all medical students and a fine example to any who care to model their lives thereafter.

To clear up what may confuse some of you, I will merely recall that there are two diseases called Paget's disease. In 1874 Paget read a short report on "Disease of the Mammary Areola Preceding Cancer of the Mammary Gland." At the present time, cancer of the breast, beginning about the areola, usually as an intensely red, raw, finely granular skin lesion, is known as Paget's disease.

In Paget's disease of bone, called by him osteitis deformans, we are more interested, and it is in relation to this disease that Paget's name is most often recalled. His original communication I have here; it came out in 1876, when he was sixty-two years old, and is entitled "A Form of Chronic Inflammation of the Bones." Now this disease forms a definite clinical picture in its outward aspects and it occurs to me that, like Addison's disease, Parkinson's disease and Hodgkin's disease, it was the external manifestations of the disorder that attracted Paget's curiosity and observation and made him study further a group of cases so evidently unusual. Even now there must be many unrecognized disease entities amongst us which we may even see frequently, but doubtless their outward manifestations are obscure and vary so greatly that even our best observers fail to detect them.

Paget himself called this bony disorder a rare disease of bone and it still remains such, though some 200 cases have been reported in the literature. Since Paget pointed out the characteristics which we shall discuss, studies of the past literature and old museum specimens have revealed many unrecognized cases. Jonathan Hutchinson himself claimed to have found a typical example in a mummy's skull from Egypt. Yet, that it is still a rare disease is shown by the fact that of 285,000 out-patient cases at the Massachusetts General Hospital, in the years 1903 to 1915, only 7 cases are recorded as definite examples of this disorder.

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* Read at the meeting of the historical section of the Harvard Medical Society on Jan. 4, 1916.

Now, as I have suggested, the clinical picture is pretty definite except in the cases where a single bone is affected. These cases are extremely rare and the diagnosis rests entirely with the x-ray findings. It is essentially a chronic disease of bone occurring in middle or late life and usually unattended by any symptom other than those of skeletal changes, except for grumbling rheumatic pains in the parts affected. Paget himself paints the picture clearly as follows: "The disease begins in middle age or later, is very slow in progress, may continue for many years without influence on the general health, and may give no other trouble than those which are due to the changes of shape, size and direction of the diseased bones. Even when the skull is hugely thickened, and all its bones exceedingly altered in structure, the mind remains unaffected. The disease affects most frequently the long bones of the lower extremities and the skull, and is usually symmetrical. The bones enlarge and soften, and those bearing weight yield and become unnaturally curved and misshapen. The spine, whether by yielding to the weight of the overgrown skull, or by change in its own structures, may sink and seem to shorten with greatly increased dorsal and lumbar curves; the pelvis may become wide; the neck of the femora may become nearly horizontal, but the limbs, however misshapen, remain strong and fit to support the trunk."

Further, in describing his first case, he emphasizes strongly the postural defects. "The shape and habitual posture of the patient were thus made strange and peculiar. His head was advanced and lowered so that the neck was very short, and the chin, when he held his head at ease, was more than an inch lower than the top of the sternum. The short, narrow chest suddenly widened into a much shorter and broader abdomen, and the pelvis was wide and low. The arms appeared unnaturally long, and though the shoulders were very high, the hands hung down by the thighs and in front of them. Altogether, the attitude in standing looked strangely in contrast with the large head and handsome features."

The pathology is characteristic and borne out by the x-ray findings. It consists in a destruction and absorption of the bony tissue in the part affected; phagocytes and giant cells attack the bone, which disappears with confluence of the Haversian systems and trabeculation of cortical substance; but at the same time proliferation goes on, new bone is laid down in the marrow cavity, in the new spaces left by the destruction of the old cortex and also on the surface of the bones. The new bone at first is lacking in bone salts, and Paget himself found that phosporus, calcium and magnesium were less than normal in affected areas. Thus the structure, though thickened up and larger, is less strong and gives way before the weight of the body, producing in the spine and lower extremities the characteristic deformities.

(Lantern slides were then shown, illustrating by photographs of patients and x-rays of separate bones from different localities, all the typical characteristics of the disease. In addition the plates from Paget's original case were reproduced and finally two portraits of Paget and an engraving of St. Bartholomew's Hospital, made in 1844, were shown.)

II. SIR JAMES PAGET.

James Paget was born in Yarmouth, England, in 1814 and died in London in 1899. These 85 years were filled to overflowing always with incessant activities, and indeed, it seems remarkable, to me, that a man could work so continuously and so hard and yet survive to such a ripe old age. It is interesting for those of you who are connected with the medicine of Boston to recall that it was in 1810 that Warren and Jackson started the foundation of the Massachusetts General Hospital, which received its first patient in 1821.

Stephen Paget, the father, was a brewer and ship owner, prosperous, temperate, refined, public-spirited and generous. The mother was a splendid woman of better social position. Paget speaks of her father as a real gentleman who left as a legacy only the gout, of which he himself inherited a most troublesome share. She was a handsome, strong-willed woman, best remembered for her intense love of her children, but also for her great industry and skill in writing, needlework, and painting. Such then were his parents and Paget boasts he was well born!

It was a large family, 17 children in all, nine growing to full age, of whom James was the seventh. All were well gifted, two being artists of considerable skill, and one an entomologist of note.

Paget speaks of his schooling as being fair. It took place in a small boys' school in Yarmouth, where he states they progressed in mathematics to the quadratic equation and to unknown depths in Homer and Zenophon after Caesar, Sallust and Euclid! Anyway he made the best of his opportunities and early distinguished himself by being head-boy in the school for his last two years there.

At 16 he was through this school and it was determined he should be allowed to enter the navy. Indeed, his father had already written a letter to a friend, asking for a commission, when thinking better of it, he kept the letter over night and destroyed it the next morning. There was much turmoil and inward struggle for young Paget, but what a lucky bit of suffering it was!

Apprenticeship. 1830-1834.

So it was determined he should become a surgeon, and at 16 he was apprenticed to Mr. Charles Costerton, the active and energetic local practitioner. Here he was to assist for four and a half years and then be allowed to go to London to study. Paget at once set himself to work with great enthusiasm and energy. He kept the office, the accounts, learned to put up medicines, the dispensing of drugs and care in minor surgery. He writes of the time spent in this work as too long, but his interest was unflagging. He saw much work of our out-patient class type and speaks of varicose ulcers as being useful for bandaging, and the experiences in injuries, minor sicknesses, etc., quite valuable. He studied hard at books, taught himself French and learned considerable anatomy.

During all these years he was a keen student of botany, in which he early displayed great interest. He was always walking about collecting and observing, and indeed an old lady of Yarmouth wrote, "that young Paget walks about the country too much to be a student of medicine." His thirst for knowledge in the things he was interested in was unquenchable, and he speaks of digesting fully a book on botany of 36 volumes, which he found in his father's library. The result of this botanizing was the joint publication with his brother Charles of a book entitled, "The Natural History of Yarmouth." This came out in 1834 when he was only 20 years of age and remains even today, because of its thoroughness and accuracy, a distinct authority on the local flora. It won him the recognition of Sir William Hooker, then the greatest botanist in England and a celebrated scientist. In looking backward from the prospective of his whole life, the value of this training in botany cannot be overestimated. In the first place it was self taught and next it made him an accurate observer. It gave him a scientifically inquisitive mind, taught him the value of going to books for reference and knowledge and by the success of the published effort brought him into contact and friendship with really scientific men and gave him a taste for the exposition of his work.

Hospital Pupilage. 1834-1836.

In 1834, when 20 years old, he went to London and entered the medical school of St. Bartholomew's Hospital. This had been for many years the greatest of the London Schools and through its great surgeons of the past, Abernethy, Percival Pott and others had become especially noted in its surgery. At the time Paget entered, the interest in the school and in teaching had somewhat fallen away and disorder was beginning to prevail in the staff and school. But Lawrence, then the surgeon to the hospital, was at the height of his fame and his talks were the great mainstay in the school. He was an impressive speaker, knew his subject well and got perfect attention. From Stanley, the anatomist, Paget got much, and in after life he speaks of learning from him the value of dull, careful painstaking work. Paget himself became a beautiful dissector and was always at work on this subject. The museum of the hospital was well rounded and equipped and a constant source of enjoyment to the boy. He read a great deal; indeed he never seemed to sleep, and during the evenings of his first year taught himself German. This gave him much repute, for but one other student knew this language and but few of the staff. The result was that older men, clinicians, and even his teachers brought him foreign publications for translation and thus he came into contact with many more medical people with whom acquaintanceship was valuabe. It was during this year that he made the discovery of the parasite "Trichinella spiralis." For years in the dissecting rooms the small white flecks had been noted in the muscles of subjects, but Paget's curiosity and thirst for exact truth led him on, even to borrowing the use of a microscope, then indeed a rarity. It was then that he observed the parasite, encysted in its capsule, made drawings and called the attention of others to his finding. One of his instructors, Owens, borrowed the drawings and reported the discovery, giving Paget full credit. At the end of this first year he graduated first in all four subjects and thus through his industry, ability and success was already a marked student.

Of the vacation at the end of his first term he writes, "I do not remember the occupation of the vacation time," but doubtless it was well taken up with work of some kind, for he never rested or let his interest slacken. During the second year he was more in the hospital and about the wards, seeing and studying actual cases, much as our clinical clerks do now-a-days. At the same time his interest in the Post-mortem room continued and he was busy at all odd moments with dissections. His knowledge of anatomy was excessive already. At the end of this term he was again first in all subjects studied and his success with his classmates was very popular, for his abilities and industry were well known and recognized. He himself writes that in those years he must have had a "great facility for cramming," for in his examination in medical jurisprudence, he afterwards found he had quoted almost verbally whole paragraphs from a book on this subject he had read just previous to the examination. During this year he passed for the College of Surgeons, and his accurate and comprehensive knowledge of anatomy is shown by the fact that when in this examination he was asked to tell abouth the fifth nerve, he gave a full description of the otic ganglion, a then little known subject.

Waiting Time. 1836-1843.

And now at 22 he was ready to practice surgery. The question at once arose of where to go. Two choices were open, local country practice or to stay on in London and to hope, with time, for a position on the hospital staff. Of course he chose the latter, despite the difficulties, and there were many obstacles, primary of which was his absolute lack of funds. His father was to send him ten pounds a month when possible, but as the latter had already entered on the years when his business steadily failed, this was a most precarious source of support. However, the die was cast and Paget had hopes that by tutoring, journal work and a rare case he could eke along. Curiously enough, he very soon became engaged to be married, of which he writes, "it is not to be pretended that wisdom, discretion, forethought or any method of sound judgment had anything to do with it," adding, however, later, "this indiscretion was the happiest event of my life." Certainly his marriage, fulfilled eight years later, was a very happy one.

Following his graduation from the school, seven hard years passed by before any promotion came, years of unremitting, colorless work. But with all the drudgery and hours of disappointment, there were bright moments, and the vast amount of knowledge acquired and work done was unquestionably the basis for his future great success. These seven years are best called his "waiting time" and they are necessary years for all who would rise to such heights. Of these years, Paget writes very haphazardly. He was waiting for a hospital appointment. He tried his hand at everything; teaching, museum work, had a very rare case, but mostly it was reading and abstracting and translating for journals. There was one trip to Paris from which he returned a bit broadened and with a wider range for thought and study, but he was not much stimulated. He learned Italian and Dutch so as to get more work and better positions on the various journal staffs for which he labored. He wrote for the *Penny Cyclopedia* and the *Biographical Dictionary.* And he kept very long and late hours.

After a few years he became curator of the museum, where his time was taken up with arranging and sorting specimens, drawings, dissections, etc. It was a good apprenticeship for the position of Demonstrator of Anatomy, which came later, and also, it led to his writing the "Pathological Catalogue of the College of Surgeons Museum."

This all kept him from practice but he "had to live."

In 1839, he had typhus. Later in the same year he was made Demonstrator of Pathological Anatomy and in 1841, Demonstrator of Anatomy. He was very popular with the students and his vast amount of reading kept him so well informed of the most modern ideas in medicine that he talked easily on all subjects. He wrote a general anatomy which was refused. It was a bitter disappointment but he consoled himself with the thought that he had learned much in preparing it. From now on papers followed in rapid succession. In reviewing a summary of his publications, I counted 147 publications of books, addresses and reports and there were many others. In 1842, came a paper on "The Chief Results Obtained by the Use of the Microscope in Anatomy and Physiology." And always he was a great pleader for the microscope. It was one of the most valuable inheritances from his botanical education.

These seven years of waiting were ones of the most confined, unremitting labors. He kept terribly late hours, was a tremendous reader, an enthusiastic student and became an admirable teacher. Of patients he had very few, his receipts for these seven years from patients being 94 pounds, something less than $500. Think what dull years on the surface they appear to be, and yet they were unquestionably the most fruitful of all, for in these years he trained himself. He became the most widely read medical man of his time and his knowledge of French, German, Italian and Dutch put him in touch with all the scientific work going on. He, therefore, was more up to date than any of his contemporaries and admirably suited for whatever the future might bring.

I think these years, coupled with his wonderful start and his interest and training in botany, gave him the basis for all that came after; for in botany he learned the value of careful and correct observation, and in school, the advantages of dull, laborious study. In the seven years of waiting he added a fund of knowledge that made him the most resourceful and scientific medical man in England for the next thirty years.

Promotion. 1843-1851.

Finally in 1843, when he was 29 years old he was elected to fill the new chair in physiology and was made Lecturer in Physiology. For this position he was admirably suited and there was no contender for the position. His lectures were a great success. He had read everything and had tested out most that he had read. He spoke well, his lectures were well attended and perfectly listened to. The best of his pupils was Kirkes, a clear headed industrious boy, who shortly afterwards published a "Text Book on Physiology" which consisted practically of his notes of Paget's lectures. And indeed Paget became a really gifted speaker and gained much notoriety this way.

Soon after he was given this appointment, St. Bartholomew's established the collegiate system, chiefly through Paget's efforts. Quarters were taken in which many of the hospital pupils came to live and Paget was made regent of the college. This rapidly proved most successful, for boys studied medicine very young in those days and thoughtful parents at once saw the advantage of having their sons live in a college under the guidance of some older and more thoughtful spirit. The fact that almost all the prizes in the school were taken by those boys residing in the dormitory or college building shows that the better class went thither and also that Paget's influence was indeed a stimulating one. He married shortly after this and for eight years lived in the college dormitory. His life now became much fuller and more happy but there was no remission or let down in his work. The cares of the college, the school and his lectures took all his time. He gave up his journal work.

Soon promotion and new offices came. First the assistant surgeoncy to the hospital and then Professor of Surgery and Anatomy to the College of Surgeons. He now completed his catalogue of the hospital museum and also the pathological catalogue of the College of Surgeons, at which latter work he writes he was at work "every day for seven years." In 1843, he was one of the original 300 Fellows of the College of Surgeons. His lectures there, as Professor of Anatomy and Surgery, formed the basis of his book, "Lectures on Pathology,' published in 1853. In 1861, he became a Fellow of the Royal Society. Again, in a lecture on "Recent Progress in Anatomy," he emphasizes the great strides due to the use of the microscope,—"The microscope must be used before we can approach the knowledge of one of those truths for want of which we are still constantly practicing in doubt."

In 1851, he resigned the wardenship of the college, moved into a new home and began to practice medicine. During this second period of seven years, his so-called academic years, Paget had worked almost without intermission, usually till 1 A.M. Lectures, school administration, publications and writings left no time for anything else. It is remarkable that he could have kept up the pace.

Private Practice. 1851.

Paget was now 37 and his life as a great and very successful surgeon began. For those of you who are already, as students or internes, desirous of getting into private practice and chafing at the passing years, there is much philosophy in these fourteen years of Sir James Paget. And none of you can afford to miss the opportunities to study them well.

If up to now his work had been hard and laborious, it may be said there was no diminution in the hours at work in the years to come. He was always working at top-speed. Besides a tremendously active practice there were lectures, offices in multitudes of societies, public positions, publications and duties end on end. His success in practice is well shown by his income. This rose rapidly to 700 pounds a year, then gradually to exceed 10,000 pounds, (over $50,000), till at 64, he gave up his hospital appointment and active operating, from which time it decreased. He had the very best practice in London and his attendance on the Royal Family as Lieut.-Surgeon to Her Majesty and the Princess of Wales brought him a great reputation as well as a baronetcy. He acquired an immense consulting practice, which he speaks of as the most interesting because it brings "the largest number of interesting cases, the least work, the greatest responsibility, the most agreeable associations and the best position and relation with one's brethren in the profession." He was very popular with both the profession and patients, but always considered the former as by far the more valuable and important.

In time he succeeded to the Surgeoncy and the position of Lecturer on Surgery in the Hospital. He was constantly overworked and run down, averaging 16 hours at work a day, year in and year out. As a result there was some sickness, including six attacks of pneumonia between 1851 and 1870, of which, he writes, "had they been cared for would have made hard work almost impossible." To me, as I have said before, one of the most extraordinary things is that Paget did live to be 85. In 1871, when 67 years old, he poisoned himself during a post-mortem examination. After an illness of three months, which doubtless was greatly prolonged because of this past overwork, he resigned his hospital appointments to his great regret. He says of himself, "I was very heavily overworked, was 67, liable to trouble in my lungs, and not unlikely to break down in such rush and haste as I sometimes lived in." He continued in private practice for some years still and worked even harder than ever, fearing lest people should think him about to retire.

Now throughout all these years ran his constant gifts to medical knowledge. He was a most prolific contributor, and the numbers of lectures he gave and meetings of societies he attended is extraordinary. He belonged to most of the medical and scientific societies of Great Britain, the Continent, and America. (Among them the Massachusetts Medical Society). He was on all sorts of boards and committees and held many active and honorary offices. There were few vacations and he cared little for sports or animals.

He had numerous friends, many of them of wide repute. Gladstone, Newman, Ruskin, Tennyson, Lowell, Tynsdale, Oliver Wendell Holmes, Huxley, Pasteur and Darwin were among his intimate acquaintances, and what a group it was!

In 1895, Lady Paget died, and from this time he seemed to fail. But he fought his old age with good spirits, and up to his last year, when the Bible was his constant source of reading, he kept at his medical readings, studies and the analysis of his past work and cases. Finally, while at a children's party at his son's home Christmas Day, 1899, he caught cold and within a week succumbed to broncho-pneumonia.

It had been a remarkable life, very full, very active and satisfactory and led him in his old age to a position from which he could with real satisfaction look back on the fruits of his labors. A close study of it reveals much of interest to all, but particularly to those of the profession interested in something above ordinary success. It is a revelation of the advantages of connecting scientific learning with the practice of medicine, and a model of many of man's best qualities, and highest ideals.

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Original Articles.

A SKETCH OF THE ORGANIZATION FOR THE CARE AND TRANSPORTATION OF THE SICK AND WOUNDED IN THE BRITISH EXPEDITIONARY FORCES IN FRANCE.

By Roger I. Lee, M.D., Boston.

The following little sketch must in no sense be regarded as authoritative. It includes only what came under my own eyes in a recent trip to France as a member of the Harvard Unit. This unit took complete medical and surgical charge of a British Base Hospital and was a part of the organized Medical Department of the British Government. For a little over six weeks I participated in the activities of the unit in a so-called British Base Hospital, No. 22 General Hospital at Camiers, Northern France, and was able to see the intimate details of the workings of a base hospital. At the end of my stay there I was fortunate enough to be permitted to visit a number of the casualty clearing stations, field ambulances and advance dressing stations near and at the front.

For descriptive purposes it is easier to follow the course of patients from the firing line to the rear. At the front itself one finds the so-called advanced dressing stations. The nature of these depends entirely on the configuration of the ground and the personal ideas of the medical and military officers of the regiment. The advanced dressing station that I saw reminded one of a rabbit's hole in the side of a hill. It was a dark dug-out made of the roughest possible material, an oblong space with room for 12 stretchers on the floor. A rough wooden table and a very few simple instruments completed the equipment. The personnel consisted of two doctors and two orderlies. Wounded cases were usually seen on the field and merely brought there as a place to rest before they were transported. One was told that little or no surgery was attempted here. One must remember that outside of a big action the usual activity of an advanced dressing station is very like the accident ward in a large hospital Soldiers come with fever, scabies, middle ears. skin trouble, sprained ankles as well as the wounds incident to desultory artillery fire. Every disabled soldier is sent to the dressing station, and if his condition is at all serious is kept under observation over night. Here begins the preliminary sorting of cases. A fair number of minor ailments may return to the trenches. All the others are promptly transported, evacuated it is called, in ambulances which are summoned by telephone. We saw in the trenches themselves a stellate arrangement of trenches and dugouts which was designed as a sort of hospital bay in the actual trenches. We were told that this had never been used and probably never would be used, because in any severe action sufficient to justify the use of this hospital bay, the chance of a shell exploding in the ramifications of this arrangement and killing everybody in it was too great. In times of severe action patients are merely laid on stretchers and placed in a protected spot to await their removal. From the advanced dressing stations patients are removed either to a field ambulance or to the casualty clearing stations, nearly always the latter.

A field ambulance is usually situated about five miles back of the front line and may be well compared in appearance to a gypsy encampment. The several that we saw were all the same. They were located usually on the border of a little wood. Only the actually necessary tents were in place. The three or four tents for the officers were up, and perhaps a large tent or two for patients. In case of pressure a considerable number of tents could be erected at short notice. Since five miles is within easy shelling distance, every attempt was made not to suggest to scouting aeroplanes the presence of a military encampment. The field ambulances draw their patients mainly from the reserves who are billetted in the nearby houses and villages. Patients who were not seriously sick or wounded may be sent here for further observation or treatment from the advanced dressing stations. Only a relatively small proportion of an army is actually in the trenches at any one time. The artillerymen, the reserves, the men resting after their stay in the trenches and the large number of men furnishing supplies, ammunition, etc., form a large majority. The field ambulance cares for this group. In the field ambulances there was no set operating room, but in case of emergency operations could be done. Cases remaining over two or three days were evacuated to one of the casualty clearing stations by ambulance.

The casualty clearing station is the most interesting unit of this whole organization. That is situated usually ten or fifteen miles back of the front lines and consequently out of the usual range of shells. In the casualty clearing stations one finds nurses. This is the nearest to the front they are allowed to go. We saw two fairly typical casualty clearing stations. One was in an old military prison and the other was in tents in the open. A casualty clearing station usually accommodates 600 to 800. The reason for this number is that it is the usual complement of a hospital train. It is here that the actual emergency surgery is performed, whether it is an amputation or appendectomy. Here, if possible, the cases are cleaned up and bathed. There are no beds and no sheets. The British Army Medical Corps stretcher is so designed that it makes a very comfortable bed. When it is necessary to do dressings, etc., the stretchers are lifted on wooden horses or trestles in order to get a suitable height. Since the stretcher is easily portable and always uniform it often happens that a man is put on a stretcher at the front, and he may actually arrive in England on that same stretcher although having been transported in several ambulances and trains. At the casualty clearing stations there is no x-ray plant and no laboratory. When any laboratory work is desired, the mobile laboratory is telephoned for and comes forthwith. The mobile laboratory is well-equipped and undertakes all the necessary routine examinations, even at times to the establishing of such a diagnosis as bacillary dysentery. A large majority of the cases in the casualty clearing station, however, are moved back within 24 hours. The venereal cases are sent to a special hospital. The obviously permanently disabled cases are sent directly to England. The others are sent to one of the numerous base hospitals in northern France. A few cases are kept for observation. Some have trifling wounds or illnesses and are kept for recovery, but these are not many. Others are kept because they are actually too sick to be moved. From the casualty clearing stations cases are transferred by ambulance to the hospital trains at the rail head.

The usual hospital train accommodates from 600 to 800. On the hospital train the important differentiation is between sitting and lying patients. The sitting cases are placed in the ordinary compartment of a corridor train, the lying cases are placed on stretchers in tiers either in specially constructed cars or in slightly modified baggage cars. Each train is in charge of a medical officer and a nursing sister. The trains move along slowly to some railroad stations near a group of base hospitals. In our particular base hospital convoys usually came at night, 2 a.m. being the favorite hour. Word would arrive by telephone two or three hours earlier that so many sitting and so many lying or stretcher cases were to be expected. This was our share of the train load. Such a convoy varied from 60 to 200 patients. As a rule, there would be two or three sitting cases to every stretcher case. At the railroad station the sitting cases would be loaded into charabancs and the stretcher cases into ambulances. They would come into a reception tent and there be distributed to a medical or surgical ward as the case might be. By this time every patient knew his diagnosis. It was unusual to find a Tommy who could not glibly repeat the technical medical term for his injury or disease. Arthritis, popliteal space, neurasthenia, V.D.H. (abbreviation for valvular disease of the heart) rolled off their tongues very smoothly. After they got to the wards another bath, some hot broth, and then the usual program was sleep for 24 to 48 hours.

Practically all the British base hospitals have accommodation for 1040. Before this war the usual unit was half that, 520,—500 beds for the soldiers and 20 for the officers. As a matter of fact few base hospitals in this war received officers. Special accommodations were made in a few hospitals and some smaller hospitals were entirely given over to officers. A base hospital might be located in a large hotel or warehouse. The majority of them consisted of tents. There were a few in wooden huts. Ours was a tent hospital. Three marquees jointed together made a ward for 39 patients. There were three lines of wards, A, B and C. The wards were numbered in the line. Usually there were 29 wards. In the centre of B line was the hospital kitchen in a wooden or asbestos board hut. The operating rooms were in a hut, which also had a room for x-ray and the laboratory. The base hospital is under the charge of a commanding officer, who attends to all the administrative work. The hospital is divided into two divisions, medical and surgical. Each division has its commanding officer. The other officers are assigned to one of these divisions. Roughly, one-half of the hospital is surgical, the other half medical. This arrangement is elastic and easily changed. In quiet times nearly half of the cases may be medical, but with active fighting a large proportion of the cases are, of course, surgical.

Base hospitals are essentially three weeks' hospitals, that is to say, few patients are kept longer than three weeks. On recovery, which is the rule, patients are sent to convalescent camps, where they may stay for another three weeks, and which are only barracks in charge of a medical officer, or to base details. Base details simply means that a man is fit to do some work. For example, men too old for the trenches are sent to base details, where they can get light jobs of the thousand and one varieties that must be filled in the rear of a large army. The fit men usually join their regiments from base details. If, at the end of three weeks in a base hospital, the patient still required considerable medical attention, the problem is faced as to whether he will recover in another three weeks. Only the obviously maimed and the organically diseased were allowed to return to England. For example, pneumonias convalesce in France, not in England. Wounds causing slight deformity but no serious interference with function do not return to England. A case returns to England only after most strict and severe scrutiny. The few cases that return are collected in ambulances, as either stretcher or sitting cases, and are taken aboard the hospital ship at Boulogne or Calais, taken across the channel and put on a hospital train on the other side and redistributed there. Certain cases go directly to England from the casualty clearing stations by hospital train and a few other cases go from the casualty clearing stations by means of hospital barges along the system of canals to Calais. The medical authorities try to reserve the hospital barges for non-operative cases, such as bad fractures of the humerus and certain severe head injuries. The barge hospitals struck us as the most comfortable method of transportation. A barge accommodates some 20 odd patients, in charge of a medical officer and a nursing sister. A canal tug would take seven such barges. It required two days to go from the front to Calais. We were told that it was a most uneconomical form of transportation, in time and medical officers, but it was easily the most comfortable method of traveling. In England cases are distributed in a much more specialized way. Nervous and mental cases go to one particular hospital; some hospitals take only surgical cases of one sort and another.

This sketch represents the usual system. In the event of a big action, the method is usually modified by all sorts of special circumstances. If the action can be anticipated, every nearby hospital is emptied preparatory to the reception of new cases. The base hospitals, which in times of quiet only reluctantly send cases to England, send all their patients to England. During and immediately after a big action, the base hospitals, 35 to 50 miles in the rear, merely act as casualty clearing stations and may keep their cases only a few hours. A soldier has been in bed in a London Hospital within a few hours of being wounded in France.

One always gets general impressions which are often hard to prove statistically. The first impression was that the particular system now used by the British Expeditionary Forces in France for the care and transportation of the wounded was merely the development of the experience of the British Royal Army Medical Corps in handling sick and wounded for many years. In every unit one saw at least one, usually several officers or non-commissioned officers with service ribbons. The evidence of previous experience could be seen in many small ways. Another very distinct impression was that the whole system was splendidly organized. While there were delays and bothersome petty difficulties, yet all the essentials were always present. Nothing was left to chance, but everything seemed carefully planned. The strongest impressions, probably the result of the two previous impressions, was that the British soldier when sick or wounded received admirable and abundant medical and surgical care, and everything possible was done for his comfort in transportation.

THE OCCURRENCE OF THE WASSERMANN REACTION AMONG HOSPITAL PATIENTS.

Wassermann Reaction as a Routine Test Among Patients Admitted to the Fourth Medical Service of the Boston City Hospital.*

By Albert A. Hornor, M.D., Boston.

Cases admitted to this service are unselected medical cases, and are practically one-fourth of the cases admitted to the medical wards of the Boston City Hospital. Originally, it was suggested by Dr. Sears that we do a Wassermann test upon all cases admitted to his service. This was at all times our intention, but at times more urgent work interfered so that many of the cases, particularly those remaining in the Hospital only a few days, failed to have blood taken for the test. The analysis herewith presented is of the first five hundred of these cases having a Wassermann test, irrespective of the diagnosis. Eighty-seven of the five hundred, that is to say, more than one of every six, had a positive test, either with the old Wassermann reaction or the test modified by the use of cholesterinized antigen. In only eighteen of these cases was a probable diagnosis of syphilis made before the Wassermann report was received. This means that sixty-nine out of five hundred, or 13.8%, of the cases not showing obvious signs of syphilis showed a positive test. Many of these cases after the Wassermann reaction had been reported positive, upon a more thorough physical and x-ray examination, were found to have signs consistent with syphilis. The following is a table showing the diagnoses made irrespective of the syphilitic condition.

	Positive.	Negative.	Total.
All cases	87	413	500
Pneumonia	10	49	59
Emphysema	2	6	8
Pulmonary tuberculosis	4	36	40
Hemoptysis	1	0	1
Cardiac			
Auricular fibrillation	2	0	2
Aortic disease	1	5	6
Aortic and mitral disease	1	5	6
Mitral disease	5	51	56
Cardiorenal	5	5	10
Renal	4	21	25
Diabetes Mellitus	2	6	8
Erysipelas	7	13	20
Rheumatic fever	2	16	18
Other Arthritis	2	9	11
Typhoid	5	14	19
Influenza	1	4	5
Scarlet fever	1	2	3
Malaria	1	3	4
Sinusitis	1	1	2
Stomatitis	1	1	2
Brain tumor	1	2	3
Cirrhosis of liver	2	6	8
Anemia, primary	1	1	2
Cardiospasm	1	0	1
Peptic ulcer	1	2	3
Cancer (stomach)	1	16	17

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* Read before the Suffolk District Medical Society, November 17, 1915.

	Positive.	Negative.	Total.
Alcoholism	1	30	31
Heat exhaustion	1	1	2
Syphilis	18	2	20
Acute poisoning	1	12	13
Morphinism	1	0	1
Miscellaneous	0	94	94

In none of these diseases is there a sufficient frequency of positive tests to make one think that the positive test was due to the non-specific condition. It is of interest to note that in malaria, scarlet fever, cancer, alcoholism, and jaundice, all conditions, which in the early days of the Wassermann were supposed to invalidate the Wassermann reaction by giving false positives, in this series do not give a more frequent positive than negative. The rarity of a positive Wassermann reaction with alcoholism seems to bear out the statement of several later observers to the effect that alcohol will vitiate a positive reaction. It is interesting to note the frequency of a positive test among cardiac conditions of one sort or another—note especially the five cases of mitral diseases (stenosis and regurgitation), and the two cases of auricular fibrillation, who showed no other physical signs. In one of these cases of auricular fibrillation there was an indefinite history of syphilis. The cases of aortic disease showing the positive Wassermann reaction and no other evidence of specific disease, as can be seen from the table, are few. The fact that one out of three of the cases of erysipelas have positive Wassermann reaction is interesting, not all of the seven with positive tests showed unquestioned evidence of specific. The two cases where we diagnosed acute rheumatic fever in spite of a positive Wassermann test were cases which showed typical signs of an acute polyarthritis. The typhoid patients, of which about one in four have a positive Wassermann test, at first made us wonder whether typhoid itself would give a positive test. This was all the more striking in that the first three typhoids upon whom we did Wassermann tests reacted positively.

From a negative standpoint, it is interesting to note the fact that among 270 married men and women, in 29 families there were histories of miscarriages. Out of these 29, 8 had positive Wassermann reactions, 3 doubtful, and 18 negative.

From this brief study, it seems to the writer that one may not tell in many of the cases admitted to the medical wards in general hospitals whether or not the patient's condition may be complicated by syphilis. Surely if one medical admission out of every six has positive Wassermann reaction, the doing of this test as a routine is valuable.

TREATMENT OF CENTRAL NERVOUS SYSTEM SYPHILIS.*

BY I. CHANDLER WALKER, M.D., BOSTON.

THIS paper is a summary of the treatment and its results in the first forty cases of central nervous system syphilis at the Peter Bent Brigham Hospital. These earliest cases are selected in order to rule out as well as possible remissions, relapses and temporary improvement. A period of one year in half the cases, and over a year in several others has elapsed since treatment was stopped. Cases of tabes, general paresis, cerebrospinal syphilis and syphilitic meningitis are considered; cases of purely cerebral syphilis are excluded.

This work extends over a period of two and one-half years; during the first year and a half the treatments were given by the writer, since this time and continuing through the present, by Dr. D. A. Haller. In the treatment of parasyphilis we have employed three methods,—one salvarsan alone, another the Swift-Ellis method, and a third salvarsanized serum alone intraspinally. We modified the original Swift-Ellis method as follows: maximum doses of salvarsan were given and the patient's blood was withdrawn one-half hour, rather than one hour, later; also for the intraspinal treatment, from 20 to 25 c.c. of whole serum, rather than a 40% or 50% dilution with saline was used. These modifications ought to increase the efficiency of the original technic, or should increase many times the amount of salvarsan or "whatnot" available in the serum for the intraspinal introduction in comparison to the original method. The time interval between treatments varied; usually patients were treated once a week; however, when a bad reaction followed treatment, the next week would be skipped. By occasional bad reaction is meant a severe aggravation of previous symptoms lasting more than twenty-four hours; usually there was some aggravation of previous symptoms, such as shooting pains coming on two to three hours after treatment and lasting for five or six hours; rarely any rise in temperature above 99°, rarely was morphia given. When the Swift-Ellis method was used, the patient usually spent two nights in the hospital, receiving salvarsan one day and the intraspinal serum the next. Many times, however, both salvarsan and intraspinal serum were given the same afternoon, the patient leaving the hospital next morning without any symptoms. Improvement was gauged by the patient's own feelings, by the spinal fluid cell count and by the Wassermann reaction. In the Wassermann reaction we used the cholesterinized heart extract and varying amounts of spinal fluid, different test tubes containing from 1 c.c. to 0.05 c.c. each; in this way it was easy to note resultant changes in the strength of the reaction. It might be stated that absolute reliance should not be put on the cell count in tabetics as we have noted that during severe paroxysms of pain in tabetics untreated and while under treatment, the cell count may be considerably higher than during a more quiescent period. However, this finding is not constant, but should be kept in mind. We have noted this variation only in tabetics.

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* Read before the Suffolk District Medical Society, Nov. 17, 1915.

In the first group, with salvarsan alone, we have treated seven cases of central nervous syphilis; five were tabetics, two of which had negative cell counts and negative Wassermann reactions in the spinal fluid. These two cases were quickly relieved of their pains temporarily, but required eight and ten doses before more permanent relief of pains and improvement in ataxia resulted. These cases have not relapsed. Another tabetic has had four series of six doses each in the past two years. Considerable improvement in ataxia and relief of pains followed treatment in each series, but improvement lasted for only a few months. The spinal fluid in this case is still positive in 1 c.c. amounts and the cell count is 7. This case has had much intramuscular mercury during past series of salvarsans. The other two tabetics received six doses of salvarsan, without any improvement. Of the non-tabetics, one was a case of syphilitic meningitis with a positive blood and positive spinal fluid in 0.5 c.c. amounts, a cell count of 940 (polynuclears 3, small mononuclears 62, large mononuclears 35). Patient had a chancre nine months previous and a rash seven months previous, followed by one salvarsan and three months of mercury by mouth. Patient was given four doses of salvarsan at weekly intervals, following which his spinal fluid Wassermann reaction was reduced to 1 c.c. positive with a cell count of 33, blood still positive; after two more treatments the patient was lost sight of.

The remaining case was one of cerebrospinal syphilis, with a positive blood and spinal fluid in 0.3 amounts, a cell count of 98. Following five injections of salvarsan, the spinal fluid cell count was 23, the Wassermann reaction was negative in 2 c.c. amounts, blood still positive.

Other cases have been started on salvarsan alone, but as no improvement in symptoms and laboratory findings were obtained after a few doses of salvarsan alone, these cases were then given the Swift-Ellis treatment, and these cases will be taken up now as Group 2.

In Group 2, using the Swift-Ellis method (salvarsan and serum) as we modified it, we treated 20 cases with a total of 143 intraspinal serum injections: 6 cases received four double treatments, 4 received five treatments, 5 received six treatments, 3 received ten treatments, 1 sixteen, and 1 twenty-three. These 20 cases were classified as follows: 11 tabes, 4 general paresis, 5 cerebrospinal syphilis. As previously stated, some of these cases were tried on salvarsan alone before the intraspinal serum was given, but as no improvement resulted from the salvarsan, either symptomatically or in the cell count or in the Wassermann reaction, we then employed the Swift-Ellis method. Five tabetics were given from three to six doses of salvarsan, 1 case of general paresis was given three, and 3 cases of cerebrospinal syphilis were given respectively six, three and two doses of salvarsan without improvement. After this, to these 9 cases and the remaining 11 cases was given the Swift-Ellis modification.

In all of these 20 cases subjective symptoms, such as headache and pains, were relieved by two or three combined treatments. Ataxia responded less readily. Only one case has relapsed, and that one while under treatment. In six of these cases over a year has elapsed since treatment and in five more, nine months. No physical signs were changed, with the exception that a positive Romberg became negative in one case; in the nine cases showing ataxia this was relieved in eight and improved in one. The spinal fluid cell count in all cases excepting the one which relapsed became normal following four or five treatments. Before treatment eight of these cases had respectively a cell count of 166, 145, 128, 108, 90, 85, 80 and 63. The cell counts in the other cases averaged between 15 and 50. In 16 cases the spinal fluid Wassermann reaction was weakened by four combined treatments; in the three cases receiving ten treatments the Wassermann reaction was weakened from a positive with 0.05 c.c. to a positive requiring 0.4 c.c., and in the case receiving 16 treatments positive with 0.05 to positive with 0.6 and in the case which relapsed from 0.2 c.c. positive to 0.6 positive. All cases showed some diminution in the strength of the Wassermann reaction, and many, as noted above, showed considerable. However, none became negative in amounts greater than 0.6 c.c.

Since nine of the above cases showed little or no improvement following two or more doses of salvarsan, but did show much improvement symptomatically and a reduction in the spinal fluid cell count when the intraspinal serum treatment was used in conjunction with salvarsan, we desired to use the serum intraspinally alone on some cases. We felt justified in trying this method on cases with a negative blood Wassermann and a positive spinal fluid. We were further influenced by the scarcity of salvarsan, for if this method should prove successful, we could treat three cases with one large dose of salvarsan, that is, one case with salvarsan and two with this patient's serum.

Therefore, to a third group of 12 cases, 8 of which were tabes, 3 syphilitic meningitis, and 1 cerebrospinal syphilis, were given 150 intraspinal treatments with salvarsanized serum, the usual dose being 20 to 22 c.c. of undiluted serum, given usually at weekly intervals.

One tabetic whose symptoms were severe pains, with a spinal fluid cell count of 15 and a positive Wassermann reaction in 0.4 c.c amounts, was given 27 treatments in 10 months, at the end of which time the spinal fluid Wassermann was negative with 1 c.c., globulin and colloidal gold tests were also negative. The pains were relieved by the first few treatments. One year has elapsed and the laboratory findings are still negative, one cell in the spinal fluid, symptoms still absent. It might be stated that this patient got progressively worse while under salvarsan and intramuscular mercury previous to our treating him.

Another tabetic whose symptoms were pains, beginning optic atrophy, inability to walk more than a few steps even with assistance, with a cell count of 40 and 0.2 c.c. of spinal fluid positive, was given 12 treatments in 4 months. Pains were relieved, eyesight improved and ataxia improved, until now, nine months later, the patient is able to walk with a cane, to drive his horses and auto and to conduct a country medical practice. The Wassermann reaction is negative with 1 c.c; the cell count is one, the globulin is ±.

Another tabetic with pains, unable to walk more than a few steps by taking another's arm, with a cell count of 210, and 0.4 c.c. spinal fluid positive, was given 21 treatments in 10 months, then was able to work and walk without a cane; cell count normal; Wassermann reaction negative in 1 c.c. It is now 3 months since the last treatment without untoward symptoms.

Another tabetic with gastric crises and ataxia, cell count 103, 0.3 c.c. positive, was given 10 treatments, crises were relieved, ataxia slowly improved, cell count normal, 1 c.c. of spinal fluid gave a negative Wassermann. It has been 8 months since the last treatment, with no return of symptoms, and he has worked every day.

Another tabetic with pains and slight ataxia, cell count of 88, Wassermann 0.1 c.c. positive, was relieved of pains and ataxia, and the cell count was reduced to 2, following 4 treatments at weekly intervals. Seven more treatments were given at monthly intervals, following which 0.4 c.c of spinal fluid was positive. The long interval between the latter treatments may explain the slow diminution in the Wassermann reaction.

Another tabetic with girdle pains and cell count of 20 was relieved by 3 treatments and cell count was reduced to 2; however, 7 more treatments did not influence the Wassermann reaction.

Another tabetic, with gastric crises and vomiting, was not relieved by salvarsan, but one serum treatment did relieve symptoms for 2 weeks; a second attack of crises and vomiting was promptly relieved for 3 weeks and a third attack was relieved for 3 weeks. Subsequently, 5 more treatments were given, but the attacks of crises and vomiting were not permanently relieved. The Wassermann reaction was reduced from 0.4 c.c to 0.8 c.c. positive. Previous to serum treatment the attacks of crises were of a week's duration and came at weekly intervals; now only an occasional attack.

The remaining tabetic, with mild pains, slight ataxia, paresthesia and loss of sexual power, was given 7 treatments at varying intervals; the pains were relieved, ataxia was improved, sexual power returned and the Wassermann reaction was changed from 0.5 c.c. to 0.9 c.c positive; at this time the blood became positive and salvarsan has been given.

Of the three cases of syphilitic meningitis, one had headache, stiff neck, positive Kernigs, interval strabismus, cell count of 550 and Wassermann reaction 0.1 c.c. positive. In two weeks he was given 3 doses of salvarsan of 0.3 gm., 0.5 gm. and 0.6 gm., respectively, 7 intramuscular mercury injections and Ki 30 grains three times a day. This treatment relieved the headache, but nothing else; cell count and Wassermann reaction unchanged. He was then given serum intraspinally without other treatment. The first treatment reduced the cells from 533 to 272, and relieved the strabismus and positive Kernigs. Five days later a second treatment reduced cell count to 100 and patient walked out of the hospital. A week later a third treatment reduced the cell count to 46. After this 14 more treatments were given at two-week intervals, and the cell count became normal and the Wassermann reaction in the spinal fluid with 1 c.c. was negative. However, the blood became positive and six doses of salvarsan were required to make the blood negative.

Another case of syphilitic meningitis in a child 3 years old, with headache, vomiting, stiff neck, positive Kernigs, opisthotonos, blood positive, spinal fluid positive with 0.1 c.c., cell count 9800, was given 0.2 gm. of salvarsan without effect. The first serum treatment reduced the cell count to 7300; second treatment reduced the cells to 2500 and the symptoms were relieved. Following this, three doses of 0.2 gm. salvarsan and 7 intraspinal serum treatments were given, also inunctions, and both blood and spinal fluid became negative, cell count normal. Four months have elapsed and patient is still normal except that deafness is unrelieved.

The other case of syphilitic meningitis, with headache, diplopia, external rectus paralysis, drowsiness, spinal fluid cell count 150, Wassermann 0.2 c.c. positive, was given 5 treatments; symptoms were relieved, cell count became normal and Wassermann reaction was not changed. Seven months have elapsed, and the patient still feels well, and has worked every day.

The case of cerebrospinal syphilis with headache, optic atrophy and early symptoms of acromegaly, was given 16 treatments, which relieved headache for 5 months; Wassermann reaction was changed from 0.3 c.c. to 0.7 c.c. positive. This is hardly a fair case on which to base judgment, as the symptoms and signs pointed strongly to one of pituitary tumor, and treatment was instigated to rule out the syphilitic involvement.

Therefore, to summarize: In those cases treated with salvarsan we used large doses; in those treated with serum intraspinally we used 20 to 25 c.c. of undiluted serum. Cases of syphilis of the central nervous system with only a positive blood react well to salvarsan; those with a positive blood and spinal fluid may react well to salvarsan alone, but they do much better when intraspinal serum is used in conjunction with salvarsan, and some who do not react to salvarsan alone do react well to the combined method. One may get improvement in general paresis from the combined treatment. Cases of syphilitic meningitis may clear up with salvarsan alone, but the combined treatment is the quickest. Cases of central nervous system syphilis with a negative blood and positive spinal fluid findings react readily to salvarsanized serum intraspinally alone, even when salvarsan has failed. The spinal fluid of the cases treated with salvarsan has become negative in two cases, whereas the spinal fluid of 7 cases treated with the serum alone has become negative. We feel that salvarsanized serum is a great asset in the treatment of syphilis of the central nervous system, and in the general run of cases we think the Swift-Ellis method is of great value and that this method in conjunction with mercury intramuscularly is the best treatment of syphilis of the central nervous system at the present time; and much improvement practically always follows such treatment.

Therapeutic and Preventive Medicine.

THE TREATMENT OF SYPHILIS.*

BY C. MORTON SMITH, M.D., BOSTON.

Chief of the Deptartment for Syphilis, Massachusetts General Hospital; Instructor in Syphilis, Harvard Medical School.

SEVERAL years ago, in the out-patient department of a general hospital, a patient was sent from the Medical to the Skin Room with a note which read, "Has this patient got syphilis? If so, send her back and we will treat her."

For nearly four hundred years mercury had kept its place in the front rank of remedies for syphilis, being considered by many a true specific. Therefore, if the diagnosis was made, any one could give the treatment where a "cure" depended on "three years of mercury."

So firmly was the value of this treatment fixed in some medical minds, that if a patient suffered a relapse, or symptoms persisted, he was accused of failing to take his medicine in the manner prescribed.

When such faith in the curative power of drugs exists, regardless of the natural history of the disease, there is little wonder that the promised cure of syphilis by a single injection of salvarsan appealed to many physicians not previously interested in the subject. Furthermore, the Wassermann test apparently supplied all the necessary help.

Clinical study seemed useless. With a positive blood test and the giving of sufficient salvarsan, the lesions must disappear and the patient recover.

However, a positive Wassermann is usually obtained in leprosy, the lesions of which do not respond to salvarsan, as shown by two cases recently so treated in this vicinity. Such false positives in no way detract from the value of the Wassermann test, which should be constantly employed. However, its results must be considered with the patient's history and physical examination, as an additional sign or symptom of the disease. There is still need of careful clinical training, for an early accurate diagnosis is the basis of successful treatment.

It is seldom necessary to wait for secondary manifestations, as spirochaeta pallida can usually be demonstrated in serum from primary sores, either with the dark field or in stained smears. The former is easier, but the latter satisfactory and reliable. We were able to demonstrate spirochaeta pallida, with dark field, in 96% of smears made from the last 97 primary sores examined at the Massachusetts General Hospital. The India ink method is unreliable and inexact. With this process, serum and ink are mixed on a glass slide, and a thin smear made. Spirochaetae do not stain with the ink, and are therefore not seen; and one must determine between various spirochaetae—artefacts, fibers, etc.,—by the hole they leave in the smear. The spirochaeta dentium may so closely resemble the pallida as to make the decision extremely difficult, even with a dark field. Wright's blood-stain usually gives satisfactory results. However, stained smears from the same lesion never show as large a number of spirochaetae as are seen with the dark field.

Patients must be taught the importance of seeking medical advice as soon as a possible primary lesion appears, and members of our profession must be properly trained and equipped for the task of making such diagnosis. Too great optimism on the part of either patient or physician may cause a costly delay.

Though there may be failure to find spirochaetae in a suspected sore, the Wassermann usually becomes positive before the appearance of secondary manifestations. We are thus enabled to begin medication during the primary stage, when the disease is most amenable to treatment. It seems well within the limits of conservative expectation that complete recovery will follow intensive treatment begun during the primary stage. The same is probably true of the early secondary period. By *recovery* is meant relief from all clinical signs and symptoms, and a persistently negative Wassermann, the patient being kept under observation for four or five years if possible.

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* Read at a meeting of the Suffolk District Medical Society, Nov. 17, 1915.

The security of the public health lies in the early, efficient treatment of the individual syphilitic.

Metchnikoff has shown by his work on animals that infection with spirochaeta pallida does not occur if 33 1-3% calomel ointment is thoroughly rubbed into the site of inoculation *within one hour*. This fact was verified on some medical students who volunteered for the experiment. The Army and the Navy made practical use of this experimental work along preventive lines by supplying to their men the so-called prophylactic package, containing calomel ointment, with instructions for its use. This procedure was said to have shown promising results. In the Navy the prophylactic package has been discontinued by our present Secretary, as he felt that the giving out of such a package put a premium on immorality on the part of the men. Since the discontinuance of this practice there has been an increase of 7% in gonorrhea and undoubtedly an appreciable increase in syphilis.

The physician who pricks his finger, or otherwise wounds himself while taking care of a luetic patient, may ward off infection by applying the calomel ointment within the prescribed time. It should certainly be tried whenever possible.

Since the discovery of spirochaeta pallida as the cause of syphilis, early excision of the primary lesion has again been advocated; not with the expectation of aborting the disease, but in the hope of favorably modifying its subsequent course by removing many organisms with the primary focus. Sufficient proof is lacking to establish the value of this procedure. Furthermore, many lesions could not be removed, owing to their location.

Modern treatment of syphilis consists of the intensive but judicious use of salvarsan and mercury. Salvarsan should supplement but not displace mercury. This has been generally conceded, Wechselman being a notable exception. He uses salvarsan alone, and goes so far as to claim that most of the untoward results of salvarsan are due to the combined treatment.

A full intravenous injection of salvarsan should be given, the amount to be determined by the patient's weight and general physical condition. Ordinarily .25 mg. per pound body weight, or .4 gm. for a man of 160 pounds, is the amount used. Women receive proportionately smaller doses. The mercurial treatment is started at once. Bichloride by mouth is ordinarily a satisfactory method to begin with. At the end of a week or ten days the injection should be repeated in the same or a slightly larger dose, if the first was well borne. A third injection of the same amount is given, ten to fourteen days later; and this is followed, in two or three weeks, by the fourth injection.

Intramuscular injections of mercury may now take the place of treatment by mouth, and either soluble or insoluble salts used. It is often more convenient for the patient to have weekly injections of salicylate of mercury in one-grain doses; or inunctions may be prescribed if the patient can and will use them. The treatment with mercury should be kept up for five months, then omitted for a month and a blood test made, which will often be negative in cases in which the treatment was begun during the primary stage.

If the Wassermann reaction is negative, a rest from treatment for three or four months may be taken. Then a course of mercury for two or three months should follow, and then a test. If negative, the patient should have a longer rest, and a two months' course of mercury twice a year for four or five years as a safeguard.

When the primary lesion has been the only symptom, a lumbar puncture and a study of the spinal fluid are probably unnecessary. With the foregoing treatment, it seems possible to abort the disease in a very high percentage of primary cases.

If the blood test at the end of the first course of treatment prove positive, the treatment should be repeated with three or four injections of salvarsan and the mercury as before.

The same line of medication should be followed where treatment is begun later in the disease; but the mercury should be kept up for a longer time. A positive Wassermann in a known syphilitic is an indication for more treatment.

Patients with infectious lesions should receive salvarsan at once, as it renders these lesions harmless quicker than any other form of treatment.

One should not rely on drugs alone. Hygiene, diet, fresh air, sleep, tonics—all play their part, as in other diseases. It is of little use to give salvarsan to the individual who has insufficient food, and there are times when rest, fresh air, and iron will do more for the patient than mercury.

During the course of syphilis, certain symptoms appear that yield in time to the general treatment, but that may be greatly benefited by certain forms of special medication. *Alopecia*, a manifestation greatly dreaded by patients, may often be checked by the addition to the general treatment of a bichloride wash for the scalp. *Nocturnal headaches* and bone pains yield to the addition of iodide of potash. *Iritis* often begins as a conjunctivitis, and is considered by the patient a "cold in the eye." It calls for the prompt use of atropine, which prevents adhesions and relieves pain. *Vitreous opacities* and changes in the retina and choroid are benefited by iodide and mercury. *Painful mucous patches* in mouth and throat yield to the judicious use of bichloride gargles and touching with tincture of iodine or chromic acid. *Late scaly papules* of palms and soles respond to salvarsan in a way that is little short of marvelous. *Gum-*

mata and late ulcerations of the skin and mucous membranes yield rapidly to a local mercurial dressing and iodide internally.

Salvarsan is of value in all these conditions, but at times cannot be applied, for one reason or another.

Many of the foregoing symptoms respond promptly to the treatment outlined; but the fact remains that salvarsan has a more marked effect in producing a negative Wassermann reaction.

Pregnancy occurring in a syphilitic woman, whether the infection be recent or remote, is an indication for energetic treatment for the welfare of the fetus; and the earlier the treatment is begun, the better will be the result.

Three or four injections of salvarsan should be given, and followed by mercury until confinement. Salvarsan has not caused abortion, as far as known, in any of our cases, and living children have been born in cases in which, without this treatment, a still-birth would undoubtedly have occurred. These babies are usually plump and healthy-looking; but may later have slight snuffles, glandular enlargement, red and shiny or desquamating heels, and there may or may not be lesions under the diaper. In the treatment of these infants mercury with chalk stands in the front rank.

Nursing babies have seemed to derive benefit form salvarsan administered to the mother. Careful instructions must be given to prevent contagion from these babies. The writer has seen two old ladies with chancre of the eyelid, who were infected from handling or fondling congenitally syphilitic babies.

X-ray examination and the Wassermann test give us much definite information by which intelligent treatment of late syphilis of bones, joints, stomach, lungs, and great vessels can be carried out. The earlier these conditions are recognized, the better.

Much comfort and subjective improvement have been given certain cases of aortitis by repeated small injections of salvarsan. In cases in which the process has gone on to actual aneurysm formation, little, if any, improvement can be expected from salvarsan, and harm may result. In syphilis of the lung, small injections of salvarsan may be given; but salvarsan is contraindicated when general syphilis is combined with pulmonary tuberculosis, as the latter process may become more active.

Certain bone and joint conditions have responded to salvarsan, while others have made an equal or greater gain on iodide and mercury.

Salvarsan is contra-indicated in cases in which the renal function is diminished, while it has been of distinct value in certain cases of syphilis of the kidney.

In all these lesions of internal organs, the initial dose should be one-fourth the normal, and the amount increased with care.

Neosalvarsan is said to be slightly less toxic than salvarsan, is more easily prepared for injection, but less efficient, especially in its effect on the Wassermann reaction. Some authors have placed its relative serologic activity as one to five.

The so-called neuro-recurrences after salvarsan occurred, for the most part, during the early days of 606, when subsequent injections were given at much longer intervals than is the custom at present.

Nausea, vomiting, headache, diarrhea, and perhaps slight chills and fever, may occur after an injection, but are less likely if a cathartic is taken the night before, and light diet precedes and follows an injection.

On account of the difficulty in obtaining either salvarsan or neosalvarsan, the Canadian product, sold under the name of Diarsenol, is being used. It is prepared for injection like salvarsan, requiring the same amount of sodic hydrate to make a neutral solution. Its therapeutic effect is apparently the same as the Ehrlich product, while the manufacturers maintain that Diarsenol is less toxic.

With the routine use of salvarsan, primary and early secondary lesions of skin and mucous membrane heal rapidly, and local treatment is often unnecessary. The value of direct application of mercury to syphilitic lesions has long been recognized.

Inunction, when thoroughly carried out, is dirty, but efficient. Metallic mercury seems more effective than its salts.

Iodine still has a limited place in the treatment of certain luetic conditions. Nocturnal headaches and the pain of periostitis are quickly relieved by iodides. Iodine seems to be of value in certain cases of syphilitic endarteritis, when used in conjunction with salvarsan, absorbing the syphilitic products, thus opening the way for the more potent drug. In the late ulcerations of the skin, iodides alone, or combined with mercury, act promptly. However, one should remember that, while iodides cause a rapid disappearance of lesions, mercury and salvarsan cure the disease.

Until recently a physician considered his whole duty was to the patient, believing it unwise to inquire as to the condition of his family or intimate associates. It is now a part of our follow-up work to see that the patient continues treatment, and that members of his family and friends who may have given or received infection, come for examination and treatment. The responsibility of bringing these suspects is placed on the patient if possible.

Syphilitics should be told the nature of their disease and the necessary precautions that must be taken. These instructions should be given like directions for taking medicine. Careful oral instructions are better than printed slips which the heedless will not read, and the conscientious do not require.

Introspective patients see syphilis in every pain or pimple that occurs years after their disease may have been cured.

Instructions should be given for the hygienic care of the mouth, with attention to broken or decayed teeth. By so doing the liability of painful and infectious lesions of the mouth will be diminished. A patient with early syphilis, requiring dental work, should tell the dentist his condition, and only urgent work should be done.

No other disease is so far-reaching in its effects on the individual and on the community. Acquired syphilis seldom kills its victim outright in the open, and so escapes conviction, but its results are to be found in deaths from apoplexy at an early age, heart and kidney disease, or involvement of the central nervous system. It is only recently that syphilis has been considered as the etiological factor in the causation of aneurysm of the aorta; but syphilis does not often appear in vital statistics as a cause of death in these foregoing conditions.

A study of syphilis of the second generation shows a high percentage of still-births and infant deaths during the early stages of the disease, revealing the true malignant character of inherited syphilis. Death returns are of little help in proving this point, as no effort is made in certain states to record the cause of still-births, and many babies dying of congenital syphilis have been tabulated as "marasmus," "cholera infantum," etc.

In many luetic families it is possible to tell from the history of miscarriages and early deaths, the approximate time at which syphilis entered the family.

That syphilis is one of the important factors in limiting the perpetuation of the species, is shown by the result of study of two groups, one of 30 families, the other of 100. In a study of 30 families with 168 pregnancies, 58% resulted in infant mortality. In the other group of 100 families with 633 pregnancies, 53% resulted in infant mortalities.

Of the children who escape an early death, some become state charges as feeble-minded, blind, or delinquent.

The one remedy for all this is the thorough treatment of every patient from the earliest opportunity until relief is secured.

It is impossible to more than guess at the relative frequency of syphilis as compared with other contagious diseases. That it outranks tuberculosis, there can be no doubt. It is probably more prevalent than diphtheria, scarlet fever and measles combined—barring epidemics. The expenditure of public money in the hospital control of these diseases, together with their early recognition and treatment, is responsible for the greatly reduced morbidity and mortality in these diseases.

At the present time there is no means whereby a patient with syphilis can receive aid from town or state without automatically becoming a pauper.

Patients with tuberculosis receiving aid from overseers of the poor were also made paupers until exempted by special legislation (1907, Section II., Chap. 287). Twenty-five per cent. of all cases of tuberculosis cared for in State sanatoria are exempt from pauperization because of that law. The same exemption ought to be extended to syphilitics.

The State should bear the expense of protecting the public from the infectious syphilitic. In no other contagious disease is the burden of expense of relief and control placed on the patient. For diphtheria, the City furnishes a hospital, and the State gives antitoxin. Hospitals are maintained for the care of smallpox, although the State requires universal vaccination and furnishes vaccine free. Large sums are expended in the relief and control of tuberculosis, and towns are required by law to maintain dispensaries for the examination and care of tuberculous patients.

Boston treats syphilis, as such, at Long Island, and there are a few beds available at the Massachusetts General Hospital. Infants and children are taken in the ward at the Boston Dispensary.

The State cares for its syphilitics in the Infirmary at Tewksbury, as required by law,—which means expense to the State of car fares, board, and medicine, and to the patient perhaps the loss of wages. Many of these cases could be treated as out-patients with little interruption to their regular employment, if there was some place near by where salvarsan could be given if necessary, at a minimum expense—the patient to pay all he could afford, the balance to be met by the town or State. Such an expenditure would be for relief and control, and might well be classed with the expense of free antitoxin, free vaccine, free anti-typhoid serum, and free laboratory tests.

There is another condition along this line that should also be remedied. At present if the overseers of the poor of some town assume the financial responsibility for a patient's treatment, it stops when they refuse further aid, regardless of the patient's needs. This has happened several times at the Massachusetts General Hospital, the local Board refusing to pay for more than one or two salvarsan injections. Questions like the amount of treatment a patient may receive, should not be left for a board of overseers of the poor to decide. They are usually short of money, and are anxious to keep down expenses.

Every syphilitic, acquired or inherited, may be infectious at some time, and a source of danger. The early lesions of syphilis are a public menace, while the late lesions are dangerous to the individual himself.

Energetic treatment of every syphilitic is thus demanded.

The expense to the State and money loss to the family are shown by figures, which are only approximate. In 1909-10 it was estimated that 6% of blindness (average three fingers at 22 inches in front being called blindness) was due to syphilis. Five per cent. of feeble-minded cases (Waverley and Lancaster) show a positive Wassermann.

Syphilis shows in our insane hospitals, as paretics, tabetics, and cerebral syphilitics,—11% for the State of Washington, 10% for the State of New York, and 9% for Massachusetts. Practically all cases of cerebral syphilis, central nervous syphilis, and general paralysis are diagnosed as general paresis in this State.

Some authors claim that tabes and general paralysis mean an antecedent syphilis. A conservative estimate places lues as the cause in over 90% of these cases.

That active early syphilis proves a real burden to the State, and loss to the individual, is shown by a recent and as yet unreported study of 100 men in the State Infirmary, whose combined stay in that institution was the equivalent of one man's stay for twelve years.

It has long been recognized that alcohol plays an important part in syphilitic infections. Idleness must also be considered. If men lose time from work on account of syphilis, it is no less true that many acquire syphilis when idle. Of those same 100 men at Tewksbury, all but two were out of work at the time of infection. Idleness usually means inadequate treatment, and the vicious circle grows larger.

Syphilis would undoubtedly be more prevalent if spirochaetae were longer lived outside the body. Experiments have shown that they live approximately four hours when left on a dry surface, and may remain alive 23 hours on warm moist gauze. Were it not for this relatively short life, extra-genital infections would occur much more frequently.

If we can accept the figures recently published in the Boston Medical and Surgical Journal,* reprints of which were distributed by the Massachusetts Society for Mental Hygiene, syphilis is not as contagious as we believe it to be.

The article referred to was a study of sixty syphilitics who were said to have exposed 1227 individuals as follows:

134 by coitus,
442 in the family or boarding house,
651 fellow workmen.

Of the 1227 persons so exposed only five are reported to have become infected—one from a mother's kiss, the others from coitus. This small number of infections seems almost unbelievable when over 10% had a venereal exposure.

Professional confidence from the conscientious victim should be respected, and the opportunity given for coöperation. If a patient with infectious lesions fails to follow instructions and carry out treatment at the present time he should be reported, by name and residence, to the local Board of Health, which has ample power to place him under restraint. The present law is sufficient to accomplish this. Such a patient endangers the community, and, as such, should be removed under the so-called "menace to community" law.

This being the age of preventive medicine, it can be applied to the treatment of syphilis in three ways:

1. By training young people to lead clean, proper lives, for their own sakes, thereby attaining as near physical perfection as possible. Fear of contagion may act as a restraint to a certain degree, but personal optimism, or overconfidence is responsible for a greater number of syphilitic infections than ignorance of the disease. Most people know that syphilis exists somewhere, but the friends they have selected are always considered above suspicion.

2. By prompt, intensive, intelligent treatment of every infected individual, begun during the primary stage, if possible, and continued until the patient is released by a clinical opinion supplemented by serologic findings.

3. By the enforcement of our present health laws:

(a) Requiring cities and towns in this state to care for all indigent persons afflicted with syphilis;

(*b*) Allowing no hospital supported in whole or in part by taxation to discriminate against the care of syphilitic patients, unless providing a hospital therefor;

(*c*) Restraining, as a menace to the community, infectious, irresponsible individuals who consider neither their own welfare nor the safety of their associates.

RECENT LITERATURE ON SYPHILIS.

The Relative Importance of the History, the Physical Examination, and the Wassermann Test in the Detection of Syphilis in Routine Work.

Hubert (*Münch. med. Woch.*, Sept. 28, 1915), in a short, but very interesting article, gives the result of the past three years' work in the first medical clinic in Munich, in an attempt to examine every patient admitted with a view to a possible syphilitic infection. Eight thousand and fifty-two patients were examined, and of this number 8.8% were found to be infected, 405 of them men and 354 women. Of this number, 52% of the men and 75% of the women did not know that they had or ever had had syphilis. This prevalence of latent syphilis in this class of patients, which was not brought out in the history or on any physical examination, must be of great importance, and often misleading in the diagnosis, prognosis and treatment of various diseases, especially cardio-vascular conditions.

In the cases of tabes, the Wassermann test was necessary to clear up the diagnosis in 56% of the men and 65% of the women, and the history of the tabetics failed to give even a clue in 25% of the men and 32% of the women. Hubert strongly urges the importance of a routine Wassermann test in general hospital work. [E. L. Y.]

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* Blaisdell: The Menace of Syphilis to the Clean-Living Public, Boston Medical and Surgical Journal, April 1, 1915.

Familial Syphilis.

Jeans (*Am. Jour. Dis. of Chil.*, January, 1916) presents a study of familial syphilis based on the observation of 100 families in the pediatric clinic of the St. Louis Children's Hospital. The subjects particularly selected for investigation were the existence of syphilis in the mothers of syphilitic children, syphilis in the fathers, syphilis in the offspring of syphilitic parents, latent syphilis, total syphilis in the families studied, decreasing grades of infection in the offspring, non-syphilitic children of syphilitic mothers, and evidence of a neurotropic strain of spirochete. The author summarizes his conclusions as follows:

Germ transmission of hereditary syphilis has not been proved, and it does not seem likely that it ever occurs. It is highly probable that all the mothers of syphilitic children have been infected with syphilis. Of eighty-five mothers of syphilitic children, 86% gave positive Wassermann reaction. All of the remaining cases but six gave a history of infection or treatment, or both. Five of these six patients were examined at least ten years after the birth of their last syphilitic children and the infection is probably dying out. Eighty-seven per cent. of the mothers deny all knowledge of the infection. The mothers are for the most part infected during the latent stage of the father. Of 331 pregnancies in 100 families, 30% were abortions, 9% stillbirths, 61% living births. Of the living births 24% had died. Of those living 80% had syphilis. Of the total pregnancies, 90% were presumably syphilitic and although 10% seem free from syphilis, there is no proof that they all are. The total syphilis in these families amounts to 93% of the entire family. For the most part our families followed Kassowitz's rule; *i.e.* decreasing grades of infection in the children. In case of syphilitic mothers bearing non-syphilitic children, it is probable that the infection in the mother is localized in places where it is not readily transmitted. The idea that there are different strains of spirochetes receives some support from these families. Transmission to the third generation, though not proved, is distinctly an occasional probability.

[R. M. G.]

Poisoning from Salvarsan.

Phillip (*Münch. med. Woch.*, Sept. 14, 1915) describes a case in which the use of moderate dosage of salvarsan caused symptoms of arsenic poisoning. A critical survey of the cases reported to have had serious results following salvarsan injection show that these can be divided into three classes: first, where the fatality or serious result was due to the disease itself; second, where it was due to the presence, hitherto unsuspected, of a serious disease of some vital organ; and third, the very rare cases where an absolute or relative over-dosage caused symptoms of arsenical poisoning. Phillip reports a case coming under the last heading because he thinks it important. A boy of twenty-two came into the skin clinic at the hospital showing all over his body, face and extremities large areas of dark bluish red exanthema. Between these were blebs of varying sizes containing sanguineous fluid. The patient had a slight temperature and retention of urine. Catheterization showed 300 c.c. of urine in the bladder with no albumen or sugar. In a few days the condition cleared up very much, but there remained a marked keratosis of the skin of the palm of the hand, and the hair on his head had entirely gone. This patient had had only two doses of neo-salvarsan 11 days apart, of 0.45 gm. and two days after the last injection had a temperature which kept up for over a month until he was admitted to the hospital. The lessened amount of urine had been present for most of that time.

[E. L. Y., Jr.]

Congenital Syphilis in One of Twins.

Vander Bogert (*Am. Jour. Dis. of Chil.*, January, 1916) reports a case of the occurrence of congenital syphilis, simulating mongolism, in the oldest child and in one of two younger twins in an Italian family. The other twin and a fourth child were entirely healthy. The author can assign no reason for the affection of one twin and not the other with the disease. The main interest in these cases lies in the congenital manifestation of syphilis in one of two twins, the other being uninfected; and the emphasis which they place on the likelihood of mistaking syphilis for mongolism. The similarity of the symptoms in these two conditions has probably been responsible for the belief that syphilis may be the cause of mongolism.

[R. M. G.]

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Medical Progress.

RECENT PROGRESS IN NEUROLOGY.

By John Jenks Thomas, M.D., Boston.

HYDROCEPHALUS.

The origin of the cerebrospinal fluid has received considerable study recently, which brings new light upon many of the clinical problems in which this fluid is of importance. It has been thought for a long time that this fluid was derived from the choroid plexuses. Dandy and Blackfan (An Experimental and Clinical Study of Internal Hydrocephalus, *Journ. Am. Med. Asso.*, Dec. 20, 1913, p. 2216; Experimentally Produced Internal Hydrocephalus, *Am. Jour. Dis. of Children*, Chicago, 1914, viii, p. 385) have produced internal hydrocephalus experimentally in dogs by placing an obstruction in the aqueduct, and they found that the fluid accumulated in the ventricles faster than it could be absorbed, and an internal hydrocephalus resulted, even when the choroid plexus of both lateral ventricles had been extirpated. This also resulted when the vena Galena magna was ligated near its origin, though not when this was placed more distally, owing to the efficient colateral circulation. They concluded that the cerebrospinal fluid is derived mainly from the choroid plexuses, probably both by filtration and by secretion. They could also produce an increase of this fluid by temporary compression of the jugulars, which ceases when the congestion is relieved by the collateral circulation. The cerebrospinal fluid is constantly formed and quite rapidly, and also absorbed, a new supply being formed and absorbed at least every four to six hours. Absorption takes place directly into the blood from the entire subarachnoid area, and is a diffuse process, while there is no absorption from the ventricles. Drugs and glandular extracts they found to have little effect on the rapidity of formation of the fluid, though pilocarpine produced a slight increase. The maintenance of the balance between the formation and the absorption of the fluid is dependent upon a communication between the ventricles and the subarachnoid space, which is solely through the foramina of Magendie and Luschka. By injecting phenolsulphonephthalein into the subarachnoid space, by its prompt appearance in the ventricles, valves at these openings could be excluded. If an obstruction exists in the aqueduct of Sylvius, the phenolsulphonephthalein does not appear in the spinal fluid, so that the so-called foramina of Mierzejewsky and Bichat do not exist. They studied seven patients with internal hydrocephalus where they could demonstrate this lack of communication clinically. In each of these cases there was practically no absorption from the ventricles, while it was high from the subarachnoid space. Four cases of hydrocephalus in which the communication between the ventricles and the subarachnoid space was preserved were also studied, and in these there was a low absorption of fluid from the subarachnoid space. They thought the probable cause of the hydrocephalus in one case following the excision of a meningocele was because of the lessening of the absorbing surface, and consequent diminution of absorption of the cerebrospinal fluid.

Frazier and Peet (Frazier, C. H., and Peet, W. M., Factors of Influence in the Origin and Circulation of the Cerebrospinal Fluid, *Am. Jour. Physiol.*, 1914, xxxv, p. 268) in their experimental work found that so long as the fluid is widely distributed throughout the subarachnoid and subdural spaces of the brain and cord, it is not easy to determine where changes in the movement or constitution of the fluid take place. It is produced almost entirely in the four ventricles, which they also showed by closing the aqueduct which produced increase of intracranial pressure. Absorption is practically nonexistent in the ventricles—the lateral ventricle is practically only a reservoir. The cerebrospinal pressure has been found to vary with the pressure of the venous sinuses, and to be practically identical with it. Closure of the carotid circulation causes an immediate, but only temporary, fall of this pressure, but obstruction of the venous circulation is followed by a more or less constant increase in pressure. The rate of secretion of the fluid was found to vary greatly under normal conditions, and was practically uninfluenced by complete closure of both common carotids. The benefit from ligation of the common carotids, as has been done in cases of hydrocephalus, is not supported by the results of exact laboratory methods. By the phthalein test, the writers found 50 to 60 per cent. is absorbed within two hours, and they find that absorption is largely by venous channels, and that by lymphatic channels much less and more slow. Within ten minutes of an injection of phthalein into the lateral ventricles, it may be recovered from the blood in the torcula. As absorption is chiefly through venous channels, obstruction to venous outflow is immediately followed by a rise in the venous pressure, by accumulation of cerebrospinal fluid, and an increase in intracranial tension. Dixon and Halliburton (Dixon, W. E. and Halliburton, W. D., The Cerebrospinal Fluid: I. The Secretion of the Fluid, *Jour. of Phys.*, 1913, xlvii, 215; III. The General Effects of Increasing the Cerebrospinal Pressure, *Jour. Phys.*, 1914, xviii, 317) believed that some product of the cerebral metabolism, perhaps similar to a hormone, is the essential factor in stimulating the secreting epithelium of the choroid plexus to activity. They have also shown the effects of an increase in intracranial pressure on various bodily functions. A moderate increase stimulates the respiratory, vasomotor and cardio-inhibiting centers, which is least marked in the respiratory center. When the pressure is increased to a point considerably above the normal arterial pressure, on the contrary, the respiration is inhibited, and ceases in a few seconds, while the other two centers continue to be active, with a consequent rise of arterial pressure, in spite of the slow heart, while a little later still the cardio-inhibiting center becomes paralyzed, with the vasomotor center still active, producing a still further rise in the arterial tension. Ultimately, however, this, too, becomes paralyzed and the arterial pressure falls.

Weed (Weed, L. H., Theories of Drainage of Cerebrospinal Fluid, with an Analysis of Methods of Investigation. Pathways of Escape from Subarachnoid Spaces with Particular Reference to Arachnoid Villi. Dual Source of Cerebrospinal Fluid, *Jour. of Med. Research*, Boston, 1914, xxxi, p. 51) working under the direction of Cushing, also carried out a series of experiments to determine the source and methods of absorption of the cerebrospinal fluid. He injected a solution of potassium ferro-cyanide and iron and ammonium citrate into the subarachnoid spaces during life, with subsequent precipitation of Prussian blue wherever the fluid penetrated in the head and neck, by fixation of the tissues *in situ* by a 1% solution of hydrochloric acid in formaldehyde. He concludes that absorption takes place chiefly in the venous sinuses. After injection of the fluid into the spinal subarachnoid spaces, he found the course of the fluid to be through the cranial subarachnoid spaces, into the great sinuses, and especially the superior longitudinal sinus, though all the other sinuses take part also in the process of absorption of the fluid. He also believes that the absorption is chiefly cranial because of the much more rapid absorption and excretion in the urine of phenolsulphonephthalein from the cranial spaces than from the spinal, after ligation of the cord and meninges in the cervical region. He finds that the cerebral vessels proper play no part in the absorption of the fluid under normal conditions of pressure, and that the subdural spaces also play no part in the process, since no connection exists between them and the subarachnoid spaces. The path of escape from the subarachnoid spaces into the sinus he thinks to be by means of the "arachnoid villi." These are projections of the arachnoid into the sinus, chiefly about veins entering the sinus, and most numerous in those places where the great cerebral vessels enter. The arachnoid tissue, as it passes backward and inward in the wall, becomes myxomatous, and is covered at its top where it lies close to the endothelium of the sinus, by one or more layers of mesothelial cells through which and the endothelium the fluid passes into the sinus. Usually these villi are confined to the sinus wall, but in adults they may also project into the lumen, the myxomatous portion forming the ground work of the pacchionian granulations. He also states that projections of arachnoidal mesothelial cells occur in all portions of the dura, especially about the sagittal and cavernous sinuses, serving as intradural channels for cerebrospinal fluid, thus accounting for the oozing of fluid from the dura when this is exposed during life. He believes the passage of the fluid through the villi is a filtration rather than osmosis or secretion, since the Prussian blue granules are found in the cells and lumen of the sinuses even with high concentration of the fluids injected, and retrograde passage of fluid through these villi takes place when there is obstruction to the venous circulation within the cranium. The lymphatic system, he thinks, plays an accessory part in the absorption of cerebrospinal fluid, since after injection into the subarachnoid spaces, Prussian blue is found in the cervical lymph channels and nodes in the perinuclear lymph spaces of the cranial and spinal nerves. Large amounts of Prussian blue were found especially about the olfactory nerves, in the surrounding connective tissue, and in the lymph spaces of the nasal mucous membrane. Weed cites several cases where the fluid containing potassium of cyanide ran out of the nose during the injection. That is, in short, Weed thinks the drainage of the cerebrospinal fluid is mainly by filtration through the arachnoidal villi from the subarachnoid spaces into the venous sinuses, and to a lesser extent along the perineural spaces of both cranial and spinal nerves to the lymphatic vessels.

Weed thinks the chief sources of the cerebrospinal fluid are from the choroid plexuses of the cerebral ventricles and the perivascular systems of the nervous tissues. He introduced a cannula directly into the third ventricle from the fourth. When the cannula was introduced there was at first a rapid flow of several drops, followed by a gradual diminution, and finally after three or four hours, all flow ceases. The fluid obtained in this way appeared identical with that found in the subarachnoid spaces. If the direction of the flow of fluid in the perivascular spaces, which are found about the cerebral vessels, were shown, we should have further information in regard to another possible source of the cerebrospinal fluid. By subarachnoid injection of the cyanide solution, Weed found no granules of Prussian blue in the perivascular spaces, when low pressure was used. With medium pressure these granules appeared in the perivascular and pericapillary spaces, but not in the vessels themselves. Using high pressure for the injection, granules were sometimes found in the lumen of the capillaries. These results point to a flow from the capillaries into perineural and perivascular spaces, and so into the subarachnoid spaces, where the fluid mixes with that from the ventricles, and, therefore, to the dual source of the cerebrospinal fluid from the choroid plexus and the cerebral capillaries.

Weed and Cushing (Weed, L. H., and Cushing, H., Studies on Cerebrospinal Fluid, Effect of Pituitary Extract on its Secretion (Choroidorrhea), *Am. Jour. of Phys.*, 1915, xxxvi, p. 77) also introduced extracts of the posterior lobe of the hypophysis intravenously and measured the secretion of cerebrospinal fluid by introducing a cannula into the third ventricle. They thought it produced an increase in the secretion of cerebrospinal fluid, and were able to exclude a simple increase of expulsion of fluid already formed, due to physical conditions resulting in changes in the volume of the brain. They conclude that extracts of the posterior lobe of the hypophysis increase the rise of production of cerebrospinal fluid (chorroidorrhoea) by stimulating the secretory activity of the choroid plexuses.

Of possible great practical importance is the fact that Frazier found in marked contrast to all other glandular extracts that he could produce a prolonged and continued decrease in the flow of the cerebrospinal fluid by the use of the extract of the thyroid gland, and this wholly irrespective of the effect on the blood pressure.

Helle (*Arch. für klin. Chir.*, 1914, cv, p. 501, Zur chirurg. Behandlung der Hydrocephalus int. durch Ableitung der Cerebrospinalflüssigkeit nach der Bauchhöhle und nach der Pleurakuppe) reports two attempts at surgical drainage of the cerebrospinal fluid in two cases of hydrocephalus. The first was in an intelligent boy of eight, with contracture and spastic paraplegia. Callosal and lumbar puncture had been tried, with only temporary improvement. He therefore implanted a stretch of vein from the lumbar dural cavity into the abdominal cavity. This gave good results for a time, but finally failed, and he then drained by rubber tubing on the other side, and this gave much relief, and five months after the procedure the contractures had subsided, and from being helpless since birth, he was learning to walk and could get about without help. The rubber drain used was 5 mm. in diameter and led from the lower end of the dural sac to the abdominal cavity in the triangle of Petit, above the ilium, passing between the external and internal oblique muscles. In the second case of external hydrocephalus, he diverted the fluid into the top of the pleural cavity, which was not opened, by means of rubber tubing, slipping over the lower end to reduce friction the lower end of a segment taken from the neighboring jugular vein. Two months after the operation there had been no reaction, and the choked disc, headache and vertigo had disappeared.

MENINGITIS.

Merkul (*Deut. Zeitsch. f. Chir.*, 1914, cxxx, 1) reports two cases of meningitis after contusion of the skull or spine, and adds several similar cases from the literature. In his cases, a persistent spinal meningitis followed about six days after a fall injuring both skull and spine, and followed by unconsciousness for a time. In neither case was the skin broken, but one of the men had had a boil on the neck about two months before, which had been incised. No streptococcus or staphylococcus could be cultivated from the cerebrospinal fluid in either case. In one case a few Jaeger's cocci were found. In this case cure followed upon lumbar puncture which was performed twice, with an interval between of fifteen days, and 15 and 10.5 cc. of fluid draw. In this case there was a great deal of pain and hyperesthesia and intermittent fever, going up to 38.7° C. at times. In the second case the skull was fractured but the meningitis seemed to be spinal only. Transient relief was obtained by lumbar puncture and then constant drainage by laminectomy was tried, and complete recovery followed. The writer recommends this procedure when relief does not follow lumbar puncture, or if the fluid, at first serous or sero-purulent, becomes purulent. Barth (Chir. Behandlung der eitrigen Meningitis, *Arch. f. klin. Chirurg.*, 1914, cv, 653) also advised laminectomy and drainage for the treatment of purulent meningitis, and reports three successful cases. He advised the removal of two or three middle or lower lumbar arches, quite low down, and drainage by tube, and not gauze. His first case was a young man who had been stabbed in the spinal cord, at the ninth thoracic vertebra, and developed a purulent meningitis. He first opened the canal at the point of the trauma, but, as the fever persisted, he then opened at the second or third lumbar vertebra also, and drained the dorsal sac above and below, and prompt recovery followed. The second case was one of purulent meningitis following fracture of the base of the skull, in a man of 37. Laminectomy was done after five lumbar punctures had been tried, with only transient relief. The third case was also traumatic in a young woman who had fallen on the street. Barth calls attention to the resemblance of these cases to those of peritonitis, and argues that if that can be cured by early operation, these cases can be also, and calls attention to the course of beginning meningitis from mastoid disease. He waits until there is leucocytosis of the cerebrospinal fluid and then drainage of the lumbar dural sac has practically lost its dangers. He considers that infections occurring through the lymph channels are curable by operation, but that not those arising through the blood- stream, nor the direct infections.

Krever (*Russky. Vrach, Petrograd,* 1914, xiii, 901) writing of pneumococcus meningitis, distinguishes two distinct forms, which vary as to prognosis, and according to the place of origin. One form of the pneumococcus infection of the meninges is secondary to a pneumococcus infection such as a croupous pneumonia, otitis, sinusitis, or endocarditis, and has a decidedly unfavorable prognosis. His second form of infection is from the naso-pharynx, through the blood, and this he considers to be distinctly more favorable in outlook. Krever thinks this difference is due to the varying virulence of the virus which is more active in the former type of meningitis, and leads to a purulent meningitis which is usually fatal, while coming from the nasopharynx the micro-organisms are generally less virulent, and generally produce only a serofibrinous or a hemorrhagic inflammation which is less dangerous. Krever, however, gives no explanation of why the micro-organisms should be less virulent in his second mode of infection.

Bokay (Heilungsmöglichkeit der Meningitis tuberculosa, *Jahrbuch für Kinderheilkunde*, 1914, xxx, 133) in a most interesting article, analyses 34 cases of recovery from tuberculous meningitis from the literature, and adds three cases of his own. This array of cases is striking in view of the fact that a diagnosis of this disease is generally considered equivalent to a death sentence, and causes most physicians to give up efforts to cure, and show the change of view in regard to this disease produced by the more accurate methods of diagnosis introduced through examination of the cerebrospinal fluid. Bokay found no cases of recovery in children less than two years of age; while the proportion of recoveries increased in children from five years of age up, though only 10 per cent. of the cases were in children over seven. The recoveries generally were in cases where the active tubercular process was limited to the meninges, and other organs were not infected, and in those in which there was no marked number of tubercles. Aside from hyperaemia, the only method of treatment that contributes to recovery is the surgical one of laminectomy and drainage. The author considers the cases of recovery after repeated lumbar punctures as being due as much to natural resistance as to the method of treatment.

CHOREA.

Passini has reported (Lumbalpunktion bei Chorea Infectiosa, *Wiener klin. Woch.*, 1914, xxvii, 1363) some interesting observations on the effects of lumbar puncture in infectious chorea. He remarks that this disease has been removed from the class of diseases of the nervous system to that of infectious diseases, and states that recent researches have apparently shown that the symptoms of chorea are due to irritation of the cerebral tracts passing from the red nucleus to the dentate nucleus. He examined the cerebrospinal fluid in a number of cases of chorea developing subsequently to acute arthritis or endocarditis, though all were free from fever at the time of puncture. In five severe cases the fluid was found under high pressure, but clear and apparently sterile. In three of these cases the chorea subsided quickly and permanently after the lumbar puncture. In the two other cases, in both of which the symptoms had existed for a year, no benefit followed. On repetition of the lumbar puncture later, there was normal pressure, but no improvement in the choreic movements. He concludes that the nervous system had suffered beyond recuperation, either from the pressure or from toxic elements in the cerebrospinal fluid, and that before this has occurred, lumbar puncture has a direct curative action.

VENTRICULAR PUNCTURE IN EPILEPSY.

Stied (Weitere Erfarhrungen mit der Balkenstich speziell bei Epilepsie, Idiotie und Verwandten Zustände, *Arch. f. klin. Chir.*, 1914, cv, 277) describes the experience of the Halle clinic with puncture of the corpus callosum in cases of epilepsy, idiocy and similar conditions. It was performed 19 times on seventeen patients. The results were not striking, though Stied expresses himself hopefully in regard to the effect, if the method can be used earlier. In many of the cases, including those of genuine epilepsy, he found diminished brain pulsation, but after the withdrawal of a few cubic centimeters of fluid, pulsation returned, which shows how the conditions in regard to the cerebral circulation are influenced by the procedure. In one case of epilepsy beginning at puberty, the attacks became milder and much fewer during the two years following the puncture. Then they returned in a mild form, but were almost entirely stopped again for four years by repeating the puncture. In another case of epilepsy since childhood with hydrocephalus and imbecility, the attacks stopped for several weeks after the puncture, and after that were much less frequent and less severe. In still another very severe case, attacks were stopped for six months, and were again banished by a repetition of the puncture when they recurred. Stied saw no ill effects from the procedure and more or less benefit except in two cases. He punctured 2 cm. back of the coronal suture and 1.5 cm. out from the median line, and in the plane of the praecentral fissure, and 2 cm. in front of a perpendicular at the anterior border of the exterior auditory canal.

Yawger (Tuberous Sclerosis and Other Unusual Features of Epilepsy, *Jour. Am. Med. Asso.*, 1914, lxiii, 1348) reports two unusual cases of epilepsy, one in a girl of 14, an Italian, where the attacks began at the age of 7. She was epileptic and imbecile with major attacks, and had one attack of status which lasted for 11 days. She was small, with short legs, and hands reaching almost to the knees; features were thick and abdomen was protuberant. She improved under administration of thyroid extract and had no attacks for six months, and then relapsed. There were many small papular tumors on the body, more numerous on the face and about the nose and mouth, and telangiectases. These were also present on the forehead, neck, arms, hands, and a few on the hips. The second case, a Slavic girl of 15, was also epileptic and imbecile, and showed similar tumors, mostly on the face, telangiectases, and a few fibromata, also a large, flat naevus to right of the lumbar spine. The writer calls attention to articles by Schuster and Wienwenfinijse on similar cases.

(To be concluded.)

Book Reviews.

Syphilis as a Modern Problem. By William Allen Pusey, M.D., Professor of Dermatology in the University of Illinois. Chicago: American Medical Association. 1915.

This monograph is reprinted by the American Medical Association from the commemorative volume which it published last June "as a tribute to the medical sciences which made possible the building of the Panama Canal and the Panama-Pacific Exposition," and represents one of the efforts of the Association for public enlightenment on health matters. Though written primarily for the laity, it is of equal interest and moment to the profession; for it deals with the subject of syphilis from the standpoint of its problems as they affect the individual and society. The history, course, pathology, prognosis, etiology and prophylaxis of the disease are consecutively considered in a series of twelve chapters. The last is of particular importance, for it advocates, in addition to social, moral, and hygienic measures, and instead of the legal recognition of prostitution, universal knowledge of the use, value, and efficacy of 33% calomel ointment as a preventive of infection. The book is in every way praiseworthy for its fearlessness of statement, scientific accuracy, and dispassionate temperateness of tone.

Mothercraft. By Sarah Comstock. Illustrated. New York: Hearst's International Library Company. 1915.

On the whole, the author has given us a satisfactory little book on her subject. Her style at times is not all that could be desired.

The chapter about the baby's clothes is excellent, but the one on prenatal care is meagre. The author's advice about knowing the dairy from which the baby's milk is to be obtained is excellent, but why does she fail to mention the very important point of having the milk from a tuberculin tested herd? Her advice to wash out the baby's eyes each day with boracic acid solution is open to criticism, and it surely is a great omission that there is no word on ophthalmia neonatorum in the book.

The illustrations do not add to the value of the work.

The Practical Medicine Series. Volume V. Pediatrics edited by ISAAC A. ABT, M.D.; Orthopedic Surgery edited by JOHN RIDLON, A.M., M.D., and CHARLES A. PARKER, M.D. Chicago: The Year Book Publishers. 1915.

This fifth volume in the Practical Medicine Series of 1915 includes in one compendium the progress in pediatrics and orthopedic surgery during the preceding year. The subjects of pediatrics, which compose more than three-fifths of the work, are adequately presented and illustrated by seven full page plates and fifteen figures in the text. It hardly seems, however, that the large field of orthopedic surgery is sufficiently represented in the sixty-two pages devoted to this subject. Only one plate and six text figures are employed. It would seem that this subject were of sufficient importance to deserve another year an entire volume in the series.

Sixteenth Annual Report of the State Board of Insanity of the Commonwealth of Massachusetts, for the Year Ending November 30, 1914.

This report covers the work of the reorganized Board of Insanity, which reorganization was acted upon by the legislature in July, 1914, and took effect August 1, 1914. The appointed members are Dr. Michael J. O'Meara, chairman; Dr. L. Vernon Briggs, secretary; and Mr. Charles E. Ward, treasurer. The Board has established the policy of appointing no staff officer who has not had previous experience in caring for the mentally ill or who has not taken some special course in this work. Arrangements, therefore, were made with the Psychopathic Department of the Boston State Hospital to give special courses of from three to six months to prospective candidates in order that they may attain the necessary qualifications. The Board has further arranged for inebriate women to be committed to the Westborough State Hospital alone, where a ward of 40 beds has been set apart for the treatment of cases of dipsomania, and all female inebriate patients, inmates of other state hospitals, have been transferred to Westborough. In August the Board determined upon a policy for out-patient work by the state hospitals, and at its request, Dr. A. Warren Stearns, assistant to the Board, made a survey of what was then being done in all the institutions under charge, it being the desire of the Board to stimulate each hospital to reach out into the community and be responsible for the mental health of the district which it covered. For more than twenty-five years the Massachusetts School for the Feeble-minded has conducted an out-patient clinic at the school once a week, and since 1885 insane patients of the harmless type have been placed at board in private families. In January, 1913, the Psychopathic Department of the Boston State Hospital opened the first out-patient department to be conducted by any hospital for the insane in this state. Over 1000 new patients visited the clinic during the first year, and active social service and after-care were begun. Following this plan, there have been opened out-patient departments in the following hospitals: Worcester State Hospital, Taunton State Hospital, Northampton State Hospital, Danvers State Hospital, Boston State Hospital, Worcester State Asylum, Monson State Hospital, and the Massachusetts School for the Feeble-minded. Clinics have been established in the following cities and towns: Boston, Fall River, Gloucester, Greenfield, Haverhill, Lynn, New Bedford, Newburyport, Pittsfield, Spencer, Springfield, Taunton, Waltham and Worcester. In the large cities the clinics are held in the hospitals themselves, others are held at general hospitals or public buildings. These clinics are conducted by members of the staff of the nearest hospital. Physicians in the community are notified of the dates of such clinics and are invited to send patients for consultation and treatment. Advice and treatment are given free to all cases of nervous or mental diseases who apply.

Students' Text-Book of Hygiene. By W. JAMES WILSON, M.D., D.Sc., D.P.H., Bacteriologist to the Counties of Down and Antrim, Lecturer in Hygiene and Public Health, Queen's University, Belfast. New York: Rebman Company. 1915.

This volume, which is based on the author's lectures in hygiene at Queen's College, Belfast, is especially written for medical students. The principles of the science are dealt with in a series of twenty appropriate chapters and the practical application of these principles is indicated. Details of analytic methods are wisely omitted. The work is illustrated by a series of twenty-six well selected figures printed as full-page plates on special insert paper. This Irish work on hygiene should prove useful, not only for students, but for teachers, sanitary inspectors and all others interested in public health.

Oxford Medical Publications. Practical Prescribing and Treatment in the Diseases of Infants and Children. By D. M. Macdonald, M.D., F.R.C.P.E. London: Henry Frowde and Hodder and Stoughton. 1915.

This small book first gives some points on prescribing, followed by a long dosage table, prepared in accordance with the British Pharmacopoeia. It then gives a short chapter on Infant Feeding, which shows the author's absolute ignorance of this important subject. Then follows a short chapter on the preparation of various foods. Next comes a therapeutic index with directions for the treatment of various diseases. An idea of this chapter can be gained by the fact that heart disease, herpes, hiccough, hoarseness, hysteria and ichthyosis follow each other. Later is given a chapter headed "Notes on Drugs," in which some of the uses which may be made of the drugs are detailed. Then follows a long chapter on Diseases of the Eye. We fail to see why there should not also be a chapter on Diseases of the Ear as well, but this is lacking. Finally, the book closes with a chapter on Tuberculin and the Tuberculous Child, by Dr. Halliday Sutherland, which is very good. Outside of this chapter we fail to see anything in the book to recommend and much to condemn. We know of nothing which will do more to hinder the development of the proper practice of pediatrics than a book of this sort.

Physiological Chemistry. Text-Book and Manual for Students. By Albert P. Mathews, Ph.D., Professor of Physiological Chemistry, University of Chicago. One volume of 1042 pages, octavo, illustrated by cuts, tables and diagrams. New York: William Wood and Company.

From Professor Mathews, who has had such a long and varied career as an investigator and teacher of physiological chemistry, we should, of course, expect only a valuable exposition of this subject in any book of which he was an author; nor have we been disappointed in our expectations.

Beginning with the simplest biological elements, he has built up step by step, the various structures of animal life to their completed whole. From the intricate and fundamental character of his investigations, one would expect a work so abstruse that those less grounded, would fail to grasp his presentation of the subject; here, again we are happily disappointed in the clear and forcible manner in which it is presented and in which apt illustrations clarify an otherwise deeply complicated subject.

The most practical methods of isolation and purification of these biological products are given with a clearness and completeness which will enable anyone at all versed in laboratory methods to reach the desired goal of isolation of the purified product.

To have to give up our old term "hemoglobins," and to see them pose as "chromoproteins," may cause a bit of sadness to those trained in the old school, but this author approves of the new term and we must submit with resignation.

We usually shy, however, at the lipo-proteins, until more evidence is given of their existence in nature. An excellent description of the nature and properties of the amino-acids, those structural stones of which the protein molecule is built, is given, with much which is new and up to date.

A very good table of food analyses and caloric values is included, but as we are no longer "cave men" one could wish that more attention were given to the values of cooked food rather than raw, which would make them more valuable to dietitians.

Digestion is fully treated with all the newer facts learned from the school of Pawlow and others, in which, though a full discussion is given, we learn that the author is rather inclined to believe in the identity of pepsin and rennin.

An admirable presentation of the nature and excretion of cholesterol and its relation to gallstone formation will prove of great interest to those who have investigated this very abstruse subject.

The chapter on cryptorhetic tissues, a term coined by the author, including the thyroid. parathyroid and reproductive glands, as well as the hypophysis, and on the nature of their secretions, is so clear, and the subject is presented in such a modern phase, that it alone would amply repay one for the cost of the book.

It is rather surprising to find that the author recognizes the uricolytic enzyme in the human, basing his results upon the investigations of one author alone, whose statements against the destructive effects of alkali have been called into question by all others who have labored on the same line of work. It would seem that when one investigator secures results which no others are able to confirm and his methods are brought into question, the results of the many would overwhelm those of the one.

It gives considerable satisfaction to find that the author has not joined those advocates of the minimum protein ration who have held the floor so long, but is more inclined to believe in a slight excess of protein as an insurance against emergencies.

There is, as would be expected, an excellent index as well as a complete bibliography for those who care to pursue particular lines of investigation still farther.

On the whole, no work on this subject has appeared which deserves greater commendation than the one which we have before us.

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NATIONAL SUGGESTIONS FOR STATE LEGISLATION.

ON May 4, 1914, there was introduced before the National Congress a bill (Senate No. 5475) for the establishment of a bureau for the study of the criminal, pauper and defective classes in the United States. The chief provisions of this bill were as follows:

"Sec. 1. That there shall be established in the Department of the Interior a bureau for the study of the abnormal classes, and the work shall include both laboratory investigations and the collection of sociological and pathological data, especially such as may be found in institutions for the criminal, pauper, and defective classes. Said bureau and work shall be in charge of a director, who shall be appointed by the President, by and with the advice and consent of the Senate, and shall receive a salary of $3,000 per annum. He shall make a report once a year, directed to the Secretary of the Interior, which, with the approval of that officer, shall be published. For the aid of the director there shall be one psychologist at $2,000 per annum, one translator at $1,400 per annum, two clerks at $1,200 each, and one stenographer and typewriter at $1,000.

"Sec. 2. That the director, if necessary for the proper discharge of his duties, may place himself in communication with State and municipal and other officials of this and other countries.

"Sec. 3. That for the proper equipment of and carrying on the work of said bureau, the temporary employment of specialists, and the purchase of instruments of precision, books, and periodicals, and rental of rooms, if necessary, there is hereby appropriated, out of any money in the Treasury not otherwise appropriated, the sum of $5,000, or so much thereof as may be required."

At the time, this bill was read twice and referred to the committee on the judiciary. Its plan of work was endorsed by the American Bar Association and by several medical societies. Though this measure failed of passage, the plan has been commended to state legislatures, and it is possible that similar measures may be introduced during the present session of the Massachusetts General Court.

Other national suggestions for state legislation have recently been made, with particular reference to the local enforcement of the federal antinarcotic law. Dr. M. I. Wilbert of the Division of Pharmacology of the United States Public Health Service, in a recent paper,[*] has said that this law cannot be ideally enforced without suitable amendments to many state laws which contain exception clauses subject to abuse. It is his suggestion that the five following requirements should be included in all state antinarcotic legislation:

"1. A further restriction of the quantity, as well as the kind, of drugs that may be sold without providing a satisfactory record.

"2. A satisfactory definition of the rights and privileges of practitioners of pharmacy, medicine, dentistry and veterinary medicine.

"3. A provision for the revocation of licenses to practise pharmacy, medicine, dentistry or veterinary medicine that may be held by habitual users of habit-forming drugs.

"4. A provision for the revocation of the license to practise any of the above professions after conviction under the federal or state laws designed to restrict the sale or use of narcotic drugs.

"5. An adequate appropriation to secure the effectual enforcement of the several requirements embodied in the state law by an established department, board or commission. The penalties imposed should be in accord with those imposed under the federal anti-narcotic law, and for the second offence, at least, should include the possibility of imprisonment, in the discretion of the court.

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[*] Weekly Report, United States Public Health Service, Jan. 21, 1916, Vol. xxxi, No. 3, p. 114. This paper was read at the meeting of the American Society for the Study of Alcohol and other Narcotics, at Washington, D. C., December 16, 1915.

"In conclusion, it cannot be too strongly emphasized that laws designed to restrict the abuse of narcotic drugs are, primarily, public health measures, and that the economic problems that may be involved should be considered as being of but secondary importance."

Without further comment, these national suggestions for state legislation are here presented for what interest or value they may offer to physicians and legislators.

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UNIVERSITY REGISTRATION STATISTICS.

In the issue of *Science* for January 21 are published the registration returns of thirty of the large universities in the United States for the academic year 1915-16. It is specified that these institutions are not necessarily the largest or the leading universities of the country. In this report it is interesting to note the relative gains and losses of several universities. By far the largest gain,—2375 students,—was made by the University of California. Four of the large universities,—Tulane, Washington, Harvard and Princeton,—showed a decrease in total attendance; and Western Reserve and Wisconsin showed decreases exclusive of the summer sessions. If the summer enrollment be omitted, however, the gain of the University of California falls to 363, whereas the University of Pennsylvania made a gain of 916 in the enrollment of its winter session. Including the summer sessions, the ranking order of the largest of these thirty universities is as follows: Columbia, California, Chicago, Pennsylvania, Wisconsin, Michigan, New York, Harvard, Cornell and Illinois. In the academic year 1914-15 the ranking of the largest universities was Columbia, California, Chicago, Wisconsin, Pennsylvania, Harvard, Michigan, New York, Cornell and Illinois. Exclusive of the summer sessions, the ranking of the universities in 1915-16 is Columbia, Pennsylvania, California, New York, Michigan, Illinois, Harvard and Cornell. In the previous year the order of these universities was Columbia, Pennsylvania, California, Michigan, New York, Harvard, Illinois and Cornell.

Comparing the undergraduate departments, the largest universities in the following order are California, Harvard, Michigan, Minnesota, Chicago, Wisconsin, Columbia, Nebraska, Texas, Kansas, Iowa and Yale.

The ranking of the medical schools of the several universities is as follows: New York, Michigan, California, Johns Hopkins, Tulane, Harvard, Pennsylvania, Minnesota, Northwestern, Illinois, Ohio, Texas and Chicago.

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PSYCHOLOGICAL STUDY OF CRIMINALS AT THE MASSACHUSETTS STATE PRISON.

In the issue of the Journal for January 20, 1916, we commented editorially on the psychological study of criminals at the Massachusetts State Prison, of which the first and second reports appeared in Bulletins 13 and 16 of the Massachusetts State Board of Insanity. In the latest bulletin (No. 17) of this Board appears a third communication presenting the results of the completed psychological examination of three hundred criminals. This investigation was conducted by Mr. C. S. Rossy, not by Dr. Stearns, to whom we erroneously attributed it in our previous editorial. The cases are tabulated with reference to their offence, mental age in terms of the Yerkes-Bridges point scale, and the diagnosis. Other tables show the distribution of cases, serving sentence for crimes of various groupings and classifications. The conclusions from this investigation are summarized by Mr. Rossy as follows:

"1. In continuation of the investigation undertaken at the Massachusetts State Prison by the State Board of Insanity, a psychological examination has been given to 200 more inmates of the institution.

"2. The total number of examinations made up to date is 300.

"3. Of these 300 subjects, 22% are found to be feeble-minded, 9.6% border-line cases, and 3.3% presumably psychotic.

"4. The 22% feeble-minded subjects are custodial cases in so far as their deficient mentality and significant history indicate the need of supervision."

The result of this examination constitutes a valuable further contribution to the accumulating data bearing upon the psychologic status of criminals of various types and the relation of crime to mental defect

A WORD TO MEDICAL SPEAKERS.

It has been traditionally said that physicians are habitually poor writers and public speakers, presumably from their lack of training in literary expression and in elocution. As a matter of fact, we believe that, in the matter of writing, this reproach has largely been removed from the profession of the present day. In regard to public speaking, however, it appears that there is still room for improvement. It has recently been called to our attention by a physician whose hearing we know to be excellent, that he has suffered much inconvenience and vexation at medical meetings from the failure of readers and speakers to raise their voices and to speak with sufficient distinctness to make themselves readily understood. Many readers enunciate well enough while facing the audience, but when turning away towards a blackboard or lantern screen, project their voices directly away from the audience, which thus becomes unable to follow their remarks. A little thought and pains on the part of medical speakers in this respect not only would augment the pleasure and profit of their hearers, but might even increase the interested attendance at many scanty medical meetings.

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MASSACHUSETTS MILK LEGISLATION.

In furtherance of the long-continued effort for legislative control of the milk supply and its purity in this Commonwealth, another bill has been introduced before the present session of the Massachusetts General Court upon petition of Dr. Allan J. McLaughlin, State Health Commissioner. This bill, whose complete text with comment we may publish in a later issue of the Journal, aims to prohibit the sale or delivery of milk in any city or town without a permit from the local board of health, to be issued after an inspection of the place and circumstances under which the milk is produced and handled. Any such permit may contain reasonable conditions for the protection of the public health and may be revoked for failure to comply therewith. No charge is to be made for this permit. On February 1 this bill was referred by the Senate to the joint session of its committees on agriculture and public health. Further editorial comment upon this desirable piece of legislation will be deferred until these committees have rendered their report.

THE JOURNAL OF CUTANEOUS DISEASES.

With the publication of the January number of the *Journal of Cutaneous Diseases,* the office of publication has been changed from New York to Boston, the editorial offices being still in New York. Aside from the interest and value of this old and respected publication becoming more closely connected with the medical centre of Boston, it is interesting to remember that the late Dr. James Clarke White was one of the Journal's early editors, and that his son, Dr. Charles J. White of Boston, is now president of the American Dermatological Association, of which this Journal is the official organ. We trust this change in method may prove to be another step in advance in making this Journal still more useful and commendable, and a praiseworthy expression, not only of the American Dermatological Association, but of the interests and progress of the particular branch of medicine which it serves.

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MEDICAL NOTES.

Typhus Fever in Mexico.—The weekly report of the United States Public Health Service for January 21, 1916, states that typhus fever is prevalent at Queretaro, Mexico, where, on January 12 the total number of cases was estimated at 500.

Prevalence of Meningitis, Poliomyelitis, Smallpox and Typhoid Fever.—The weekly report of the United States Public Health Service for January 21, 1916, states that during the month of December, 1915, there were in Massachusetts 9 cases of cerebrospinal meningitis, 12 of poliomyelitis, and 142 of typhoid fever. During the same period there were also reported 9 cases of meningitis in Maryland, 9 of poliomyelitis in New Jersey, 46 of smallpox in South Carolina, and 272 of typhoid in Maryland.

Philadelphia Pneumonia Commission.—As a result of the recent epidemic of pneumonia in Philadelphia, the director of the Department of Health and Charities in that city appointed on January 11 a commission consisting of members eminent as clinicians or in laboratory research, to make an intensive study of the disease The chairman of this committee is Dr. David Riesman, professor of clinical medicine in the University of Pennsylvania and the Philadelphia Polyclinic. The further personnel of the committee is as follows: Dr. Hobart A. Hare, professor of therapeutics at Jefferson Medical College; Dr. Judson Daland, professor of clinical medicine in the Medico-Chirurgical College; Dr. William Egbert Robertson, professor of the practise of medicine, Temple University; Dr. Randle C. Rosenberger, professor of hygiene and bacteriology in the Jefferson Medical College and the Women's Medical College; Dr. Paul A. Lewis, director of the Ayer Clinical Laboratory of the Pennsylvania Hospital and director of the pathological department of the Henry Phipps Institute; and Dr. John A. Kolmer, professor of pathology, Philadelphia Polyclinic, and instructor of experimental pathology at the University of Pennsylvania.

Dangers of Toy Whistles.—In the weekly bulletin of the New York Department of Health for February 5 is a report of a bacteriological examination recently made of toy whistles offered for sale by the street peddlers.

"It is really surprising to see how thoughtlessly many parents purchase toy whistles from street peddlers who put them to their mouths for purposes of demonstration. That this disgusting habit is likely to spread disease goes without saying. Some time ago, a bacteriological examination was made of twelve whistles purchased from push carts. Five of the whistles had metal and seven wooden mouth pieces. The average number of bacterial colonies developing from the wooden whistles was 99; from the metal whistles, 45.

"A large variety of microörganisms was found In nine instances streptococci were isolated, two of them of the hemolyzing variety. These streptococci were tested on mice to determine their virulence. Eight of the nine mice died, five within twenty-four hours, two within the next twenty-four hours, and one four days after inoculation. Comment on these findings is unnecessary."

Report of Fresh Air Home at Dumont, New Jersey.—June 1, 1915, marked the opening of the Fresh Air Home at Dumont, New Jersey, the object of which was to furnish summer vacations to children of tuberculous families living in crowded tenement districts.

From June 1 to September 15, 74 children, boys and girls ranging from five to fourteen years, were cared for, each for a period of two weeks, and in every instance the children showed the results of good food and living under proper hygienic conditions for two weeks. They were taught the rudiments of personal hygiene, supplied with individual toilet articles and with clothing, thereby eliminating any expense to the families. A system of weighing all children on arrival and discharge was maintained and showed a marked increase in weight and general improvement.

The undertaking constitutes a much needed acquisition to the social service work connected with the Yorkville Tuberculosis Clinic.

Pyorrhea Alveolaris.—Some time ago the U. S. Public Health Service instituted an investigation of the curative effects of ipecac and emetin. The work has now been under way for about nine months and is still being pursued. In a recent number of Public Health Reports there is published a preliminary report on the results thus far obtained. According to this, of 190 cases examined, 187 showed the endameba; and of the 187, 78 were treated for pyorrhea. None of the 78 treated lost their endamebae permanently. The condition of the gums and teeth was greatly improved in 22 cases, while 41 cases remained the same; the results were doubtful in 2 cases and 1 case became worse. Practically all that were found negative for endamebae at the conclusion of the injections were found positive for endamebae from two weeks to four months later, in spite of using a solution of ipecac as a mouth wash.

The report concludes as follows: "Emetin is an amebicide, but alone will not cure pyorrhea alveolaris." Less confidence will hereafter be placed in the properties of emetin or other preparations of ipecac, although it is not denied that the drug possesses amebicidal properties. It appears necessary to revert to a degree at least to those painstaking and tedious operative procedures, the efficacy of which has long been known to dental surgeons. Just how much assistance is to be expected from the ipecac preparations used in conjunction with operative measures is a question upon which further studies may be expected to throw some light."

Prohibition in Russia.—The Pirogoff Society, the leading medical society of Russia, has published a report concerning the prohibition of alcohol in that country. They state that the cessation of the drink traffic has contributed to a diminution of sickness (especially venereal and mental), accidents (especially railway), fires, suicides, crimes; and to an increase of industry and material wealth. To the question, shall vodka be eliminated but the return of beer allowed, they answer that the "use of wine and beer cannot be a remedy for alcoholism, because they lead to alcoholism. Beer and wine, on the contrary, are dangerous, because, being weaker and pleasanter to the taste, they attract women and children." Other measures to supplement prohibition are urged, better social conditions and a broadly based propaganda, for the people are filled with ignorance and stupid prejudice regarding alcohol. A survey made in Russia, Province of Penza, showed that only 14% of former drinkers had used substitutes, and most of these were comparatively harmless drinks.

New York Association for Improving the Condition of the Poor.—The seventy-second annual report of the New York Association for Improving the Condition of the Poor states that for the first time in its history, during the year ending September 30, its expenditures exceeded three-quarters of a million dollars, $786,000. The growth of the Association in the last twenty-five years may be judged by the statement that the gross expenditures for the year 1890 were $30,278. The scope of work of the Association may be judged from the following figures: 12,000 poor families were assisted with money, food, clothing, rent, friendly help or nursing service; 33,170 days of country care were given to 1,990 convalescent persons; 42,228 days of fresh air outings were given to 17,860 mothers and children; 71,462 days of care and treatment were given to 330 persons; 426 widows were enabled to care well for the 1,363 young children by regular pensions amounting to $105,418; 439 deserted wives, with 1,474 little children received assistance and $917 a month was secured for them from deserting husbands; 1,968 men and women were placed in permanent or part-time positions; 16,016 bundles of clothes were washed for families in tenement homes at cost at the new wet wash laundry; 116,734 portions of hot food were sold at a very low price at the newly opened People's Kitchen, to be taken to home or factory or eaten on the premises: 1,488,527 penny portions of hot lunches were sold in 19 public schools.

Report of the Philadelphia Cancer Commission.—At the general meeting of the Medical Society of the State of Pennsylvania last fall, Dr. Jonathan M. Wainwright, as chairman of the commission on cancer appointed by that Society, presented a report of its work which is published in full in the issue of the *Pennsylvania Medical Journal* for November, 1915. At its outset this report speaks as follows of the nature of the cancer problem and of the part taken by the Society in working towards a solution:

"Inasmuch as the year just passed has covered the period of the greatest activity of the state society as far as its cancer work has gone, it may be of interest to review briefly the work the society has done up to the present time and its relation to similar work by other organizations.

"The state society began its cancer work in 1909, a time at which, at its meeting in Philadelphia, an entire session of the surgical section was devoted to the study of cancer. As the result of this meeting the state society determined to make a strong effort to reduce unnecessary cancer mortality, placing the matter in the hands of a committee, which, with a few changes in membership, has continued up to the present time.

"We believe that the Medical Society of the State of Pennsylvania was the first organization of any kind in this country to make any systematic effort to attack this very important problem. That the problem is really an important one can probably best be seen by reports of the State Department of Health. Figures from this department are as follows: Total deaths from cancer in 1906 were 4208; in 1907, 4420; in 1908, 4520; in 1909, 4845; in 1910, 5100; in 1911, 5197. This is an increase of 23.5 per cent. in five years. These figures include the natural increase due to increase of population. But the death rate is increasing faster than the population, as shown by the fact that during this same period the deaths per 100,000 living, increased from 60.7 in 1906 to 66.4 in 1911, an increase of nearly 10 per cent. in the actual death rate in five years."

The report continues to speak of further plans of the Society and refers to the part taken by this Journal in the publication of its cancer number on July 15, 1915.

Oberlin College Hospital.—Report from Oberlin, Ohio, on January 31 announces that the sum of $100,000 has been provided by bequest of the late Dr. Dudley P. Allen of New York for the use of Oberlin College.

"Of this amount, $50,000 is to be used, under the direction of the board of trustees of Oberlin College, towards the construction and equipment of a hospital building to be known as the Allen Memorial Hospital 'for use of the community—that is, the inhabitants of the village of Oberlin, and of the college and its students.'

"The remaining $50,000 is for an endowment fund to be known as 'The Dudley P. Allen Fund,' the income of which is to be used, so far as may be necessary, for the Jennie Allen Nurse Fund of Oberlin College, and the balance of the income, if any, is to be used for collegiate hospital services."

Survey of Children's Homes.—The New York Department of Health has just completed a survey of homes for children located in the City of New York. It included a careful inspection of the plumbing, heating, lighting and ventilation of the institution, cleanliness of the premises and of the inmates, a study of the diet, methods of cooking, character of clothing, care of the sick, etc.

There are 84 institutions of this class within the five boroughs of the city. As a result of the survey, 1443 recommendations were made by the inspectors of the Bureau of Child Hygiene of this department, and of these 654 were promptly complied with. The other recommendations were mostly of a structural nature which required time to modify.

So far as the childern themselves are concerned, 56% showed some physical defects. The treatment of these defects, as provided by the institution during the past year, was very satisfactory, more than two-thirds of the defects being entirely remedied and there being only five per cent. untreated. Altogether, the conditions disclosed by the survey were most satisfactory and the institutions all showed great willingness to comply with the recommendations made by the Department of Health.

New York Death Rate.—Despite the warm, spring-like weather prevailing last week, the death rate of New York City continued high. Figures compiled by Registrar Guilfoy showed that during the week just closed, 1812 persons died in the City of New York, as compared with 1760 during the previous week, and 1460 during the week ending Jan. 30, 1915. The death rate for last week was 16.46, as compared with 13.64 for the corresponding week of last year. The acute, infectious diseases caused fewer deaths last week than during the corresponding week of last year. The deaths from influenza, bronchitis, pneumonia, heart disease and Bright's disease were considerably higher. Four hundred thirty-five persons died of influenza, bronchitis and pneumonia during the past week, while only 261 deaths were reported from these causes during the corresponding week of 1915. As has been the case during the past several weeks, the highest mortality occurred amongst the adults of the population, the death rate of children under one year and under five years being lower than during the corresponding week of 1915. The difference of 2.82 in the weekly rate is equivalent to an increase of 310 deaths. The death rate for the first five weeks of 1916 is 16.47, as compared with 14.64 for the corresponding period of 1915.

European War Notes.

War Relief Funds.—On February 5, the totals of the principal New England relief funds for the European War reached the following amounts:

Red Cross Fund	$144,311.37
Belgian Fund	94,049.11
Serbian Fund	77,208.60
Allied Fund	54,663.80
French Wounded Fund	44,891.21
Armenian Fund	31,087.60
French Orphanage Fund	23,715.75
Surgical Dressings Fund	18,722.00
Polish Fund	18,547.56
La Fayette Fund	17,693.99
French Refugees' Fund	6,905.50

BOSTON AND NEW ENGLAND.

The Week's Death Rate in Boston.—During the week ending February 5, there were 278 deaths reported, with a rate of 19.06 per 1000 population as compared with 244 and a rate of 17.00 for the corresponding week of last year.

There were 11 deaths from influenza. Deaths from pneumonia and broncho-pneumonia numbered 54 against 40 last year.

There were 47 deaths under 1 year as compared with 35 last year, and 100 deaths over 60 years of age against 87 last year.

During the week the number of cases of principal reportable diseases were: Diphtheria, 77; scarlet fever, 69; measles, 82; whooping cough, 31; typhoid fever, 2, and pulmonary tuberculosis, 65.

Included in the above were the following cases of non-residents: Diphtheria, 9; scarlet fever, 12, and tuberculosis, 6.

Total deaths from these diseases were: Diphtheria, 4; tuberculosis, 25, and whooping cough, 1. Included in which were the following non-residents: Diphtheria, 2, and tuberculosis, 3.

Massachusetts Vital Statistics.—Report issued on January 27 by the Massachusetts Secretary of State shows that during the year 1914 the death rate in this Commonwealth decreased while the birth, marriage and divorce rates increased.

There were 93,399 births in 1914, an increase of 1715 over 1913; the marriages totalled 32,588, an increase of 1185 over 1913, and the deaths numbered 59,234, a decrease of 240.

The number of divorces granted was 2987, an increase of 332.

Instructive District Nursing Association.—A special meeting of the Boston Instructive District Nursing Association was held in this city on January 26. At the morning session papers were read on the relations of visiting nurse associations to their communities. At the afternoon session the secretary reported the existence of 102 nursing associations in Massachusetts, and, in behalf of a special committee, reported a recommendation for the establishment of a Massachusetts Committee for Directors of Visiting Nurse Associations. Reports were also read by the presidents of the several county committees on district nursing.

Hospital Bequests.—The will of the late Mrs. Charles Ingraham French, which was filed on January 27 in the Norfolk County Probate Court at Dedham, Mass., contains a bequest of $5,000 to the New England Hospital for Women and Children to establish a free bed in memory of the late Dr. Marion Newt.

South Shore Hospital Meeting.—On Monday of this week, February 7, a medical meeting was held at the South Shore Hospital, Marshfield Hills, Mass., at which Dr. Farrar Cobb of Boston, delivered an address on "Cancer of the Uterus."

Massachusetts Homeopathic Hospital.—At the annual meeting of the Massachusetts Homeopathic Hospital Corporation, held in Boston on January 26, was presented the forty-sixth annual report of the institution, in which particular emphasis was laid on the opening of the Jennie M. Robinson Memorial Maternity Building, dedicated on January 1, 1916, and containing seventy-six beds.

"In consequence of the large number of additional nurses and employees required, the trustees have found it necessary to purchase the adjoining Hotel Newton and adapt a part of it for thirty maternity nurses. The trustees also contemplate the erection this year of a new service building to accommodate dining rooms, kitchens and laundry, now greatly crowded and overburdened, together with all machinery now in the main hospital; and they have purchased other property in the vicinity, intending to adapt it for the occupancy of other employees.

"The hospital in 1915 cared for 9,074 patients in its wards, besides 274 patients in its convalescent homes, nearly 53% of its work being for free patients; and the steady and rapid growth of the work testifies to the regard in which it is held. Its out-patient department shows a similar growth and with new quarters and the most modern equipment, a considerable advance is expected. The hospital has great need of other buildings and an increase of its endowment funds to care for its annual deficit."

CAUSES OF INFANT MORTALITY.—On January 28, Dr. John Lovett Morse of this city, delivered an address on infant mortality before the Boston Milk and Baby Hygiene Association. In this address he is reported as having spoken as follows of the causes of infant mortality and of the means for its prevention:

"Prematurity, congenital debility, congenital defects and accidents account for 25% of our infant mortality, diseases of nutrition and gastro-intestinal disorders for 40%, acute respiratory diseases for 20%, acute infectious diseases like scarlet fever for three per cent., tuberculosis for two per cent., and all other causes for 10%.

"The diseases of nutrition and the gastro-intestinal diseases are due to bad feeding. About 85% of all infantile deaths are due to bottle feeding, and 90% of the deaths from diarrheal diseases are of bottle-fed infants. In one year one in five of the bottle-fed died, and only one in 30 of the breast-fed died.

"To lower the mortality from the diseases of nutrition and the gastro-intestinal diseases you must increase the number of babies who are breast-fed. Why do not poor women nurse their babies? They do not appreciate the importance of breast-feeding; they are tempted to use proprietary foods, or they have to go out to work.

"The remedy is to provide a kind of work which will permit them to care properly for their babies, or to provide food for the mother so that she can stay at home and nurse her baby. Bottle-fed babies die because of the ignorance of the mothers as to how their babies should be fed, and also because of the failure of doctors to tell them.

"Another reason is that such mothers cannot get good milk, and, even if they do, are unable to take proper care of it. There is thus need for education of the doctors, education of the mothers, and improvement of the milk supply."

At another meeting in Boston last week, Miss Ruth True, an agent of the Children's Bureau of the United States Department of Labor, described the organization of that Bureau in April, 1912, and reported some of its recent investigations into the social and economic causes of infant mortality. The latest statistics show that during the 10 years between the last census and the one preceding, 2,500,000 babies under one year of age died in this country. In a West Virginia steel-making and coal-mining town, the death rate was 134 out of every 1000 babies born, as against 84 in 1000 in a residential town in New Jersey. In New Zealand the infant death rate under one year is only 38 per thousand, the lowest in the world.

TWENTY-FIFTH ANNIVERSARY OF SHARON SANATORIUM.—The ninth day of February marks the twenty-fifth year of the establishment of the Sharon Sanatorium. When the Sanatorium was first opened it was a pioneer in the field of treating pulmonary tuberculosis in the open air of bleak New England. The ever-increasing number of state and private sanatoria throughout the United States for the prevention of pulmonary tuberculosis, regardless of the special climate in which they may be situated, would seem to be sufficient proof that the success of the work at Sharon has been, indirectly at least, instrumental in the marvellous development of the same idea in the last decade. As a fitting landmark in the progress of the work, the directors, at this coming twenty-fifth anniversary are desirous of establishing a small department for the treatment of children who are showing symptoms of tubercular disease. To carry out this plan of erecting a building and of maintaining it, generous gifts of money will be needed, since the income from the price of board will be far below the necessary expenditure. The present board of directors is made up as follows:

William T. Sedgwick, Sc.D., president; N. H. Stone, treasurer, 614 Sears Building, Boston; Mrs. Charles A. Porter, secretary; Edmund F. Merriam, D.D.; Mrs. Henry P. King, Mrs. William T. Sedgwick, Vincent Y. Bowditch, M.D.; L. Vernon Briggs, M.D.; Jeremiah Smith, Jr., Ernest B. Dane, Walter C. Bailey, M.D.

BOSTON LYING-IN HOSPITAL.—The annual meeting of the Boston Lying-in Hospital was held in this city on January 26 and the same trustees and officers were reëlected for the ensuing year. The reports submitted at this meeting show among other items the following points of interest:

"Number of cases cared for in the Hospital shows an increase of about 17%, including more free cases. Maternal and infant mortality, and still births, are materially reduced. The work of the Pregnancy Clinic shows an increase of more than 1,000 visits over the year 1914, and more than 2,000 visits over the year 1913. A branch of the Clinic has been opened in connection with the South End branch of the Out-patient Department, so that the Clinic is now organized to furnish medical care and supervision, prior to confinement, to each of the nearly three thousand cases a year the Hospital and Out-patient Department now take care of. The number of patients in the Hospital was 922, and the number in the out-patient department was 1932. The number of new cases treated in the Pregnancy Clinic was 1820. The average number of patients in the Hospital was 41.8.

"The resignation of the visiting physician, Dr. Charles M. Green, was recorded with expressions of deep appreciation for his years of devoted service. Dr. Robert C. Cochrane and Dr. Delbert L. Jackson have been added to the medical staff as assistant physicians to out-patients.

"Plans for a new hospital building on the land already purchased for the purpose, opposite the Harvard Medical School, at the corner of Longwood Avenue and Avenue Louis Pasteur, are being pushed to completion as rapidly as possible, and the campaign for the necessary funds for the building is being energetically pursued. About a quarter of the amount necessary for the buildings is in hand or pledged, largely as a result of the active work of the past month of the committee in charge. It is hoped that a generous public will provide the balance in time to make it possible to commence work the coming spring."

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Obituary.

GEORGE HOWARD MALCOLM ROWE, M.D.

Dr. George Howard Malcolm Rowe, superintendent and resident physician at the Boston City Hospital from 1879 to 1908, died at his home, 11 Ivy street, Boston, January 30, 1916. Dr. Rowe was born at Lowell, Mass., February 1, 1841, and was educated at Berwick Academy and Phillips Exeter Academy and at Dartmouth College, receiving the degree of A.B. from Dartmouth in 1864, and an A.M. in 1867. He graduated from the Harvard Medical School in 1869, and following that held these positions: Assistant physician at the Pennsylvania Hospital for the Insane; assistant physician, Hartford Retreat; assistant physician and superintendent, Boston Lunatic Hospital.

In 1879, Dr. Rowe was appointed superintendent and resident physician of the Boston City Hospital and during the thirty years in which he occupied this position he became a recognized national authority on hospital administration. "His scientific interest in medical advancement, his sagacious forecast of municipal needs and his liberal policy in administration made his work a controlling factor in developing the institution into one occupying a foremost place in size, scope and equipment. Dr. Rowe was deeply interested in raising the training school for nurses to the highest standard of efficiency. He was a close student of sanitation and its relation to public health and was especially conversant with hospital construction and contributed much to the literature on these subjects. During his administration he initiated, developed and completed many new additions and alterations in the equipment of the Boston City Hospital, among which may be enumerated the South Department, the Burnham Memorial Building, the Haymarket and East Boston Relief Stations, the Nurses' Home, the Pathological Building, the new surgical out-patient building, the new amphitheatre, the convalescent home, the x-ray department, the power house, and the ambulance service. Upon his resignation at the close of his service the trustees of the hospital in their public acknowledgment to him said:

"After 30 years of faithful, continuous service you have the consciousness of having achieved that high standard of efficiency which places you in the front ranks of hospital superintendents in this country."

In 1911 he was placed on the retired list of Fellows of the Massachusetts Medical Society. having been a Councilor from 1895 to 1909. He was a Fellow of the American Medical Association, a member of the American Health Association, the Boston Society for Medical Improvement, and was at one time president of the Association of Hospital Superintendents of the United States and Canada. Dr. Rowe was never married.

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Miscellany.

MEMORIAL RESOLUTIONS FOR DR. CHEEVER.

The following resolutions were adopted at a meeting of the Board of Trustees of the Boston City Hospital:—

"It is with a keen sense of personal loss as well as profound sorrow, that we learn of the death of our friend, Dr. David Williams Cheever, surgeon emeritus of the Boston City Hospital.

"The close of a long and useful life has come and the last of the original staff of the hospital has passed to his rest. For more than half a century he was a leader in the medical profession. He kept in touch with the growth of the hospital from its opening, when he was first appointed surgeon, up to the present time, and was the prime factor in giving it distinction in its surgical work. During his long career he was foremost in the ranks of those who have made wonderful advancement in surgery and many of his writings are deemed an authority and of permanent value in this field of work.

"A wise counsellor, a public spirited citizen, a beloved physician, eminent in his profession, a lover of humanity, happy in doing good, the world has been benefited by his being in it, and he will be greatly missed by all who have had the pleasure of a close relationship with him, and who have profited by his judgment and advice.

"To his beloved wife, who has traveled life's journey with him for so many years, we tender our heartfelt sympathy. We feel that she will derive great comfort and consolation from the memory of their long and happy life together, and of the great good he has done in the world by alleviating the suffering of the sick and afflicted. His devotion to her and his love for his children will ever be uppermost in her mind and will help to heal the wound his death has made.

"To his children we extend our condolence on the loss of a loving father, whose example is worthy of their emulation.

"A copy of this expression of our deep regret at the loss of Dr. Cheever we will forward to his bereaved family and will place it upon our records that it may be read by all who come after us.

(Signed) "A. SHUMAN,
"THOMAS A. FORSYTH,
"CONRAD J. RUETER,
"FRANCIS J. KEANY, M.D.,
"JOSEPH P. MANNING,
"*Trustees of the Boston City Hospital.*"

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IMPROVING CANCER STATISTICS IN THE UNITED STATES.

AT the suggestion of a number of the foremost American students of the cancer problem, the United States Bureau of the Census has instituted radical improvements in the collection and publication of the statistics of this disease. A special report on deaths from cancer in the United States during the year 1914 is in preparation and will be issued shortly after the first of the year. Inquiries recently received by the Director of the Census have indicated that some misapprehension has arisen in regard to the purpose and scope of this study, the American Society for the Control of Cancer has issued a statement explaining the significance and essential features of this project of the Census Bureau, which is thought not only to promise important additions to our knowledge of cancer but to constitute a noteworthy advance in the registration of American vital statistics.

It should first be made clear that the Census Bureau has not undertaken special research work that will in any way duplicate the studies of existing institutions and laboratories which are investigating the cause of cancer. On the other hand, there should result a marked improvement of our national mortality statistics of this disease in the direction of greater accuracy and more detail. The experience of foreign countries has shown the value of perfecting and carefully analyzing the annual statistics of deaths in order to throw new light upon the cancer problem, which still remains the chief outstanding question in the realm of medical science.

In February, 1914, the American Society for the Control of Cancer suggested to the Federal authorities that the figures of deaths from cancer in the United States Registration Area be published in greater detail, and that instead of being reported under only seven headings, as had been the custom hitherto, they be listed under many more titles according to the part of the body first affected, thus affording opportunity for more exact comparative study. The suggestion received favorable consideration by the Bureau of the Census, and a special report for 1914 was ordered begun by the former director, Hon. William J. Harris, and is now nearing completion under his successor, Hon. Sam. L. Rogers. This special monograph on cancer will consist of tables showing the deaths from cancer, according to the site of the disease, age, sex, color, nativity and marital condition, for the registration area, the several registration states and the usual subdivisions. Figures for white and colored will be shown separately for such counties and towns as have a colored population of 10,000, or at least 10% of the total. The new plan subdivides the seven titles for cancer in the International List of the Causes of Death into twenty-nine headings referring to the exact site of the disease. For instance, all deaths from 'cancer and other malignant tumors of the buccal cavity' will now be reported under the separate subdivisions for cancer of the lip, tongue, mouth and jaw, and similarly with the other groups.

Upon the further suggestion of a prominent surgeon the Census Bureau also planned to increase the accuracy of the statistics by tabulating separately the returns in which the diagnosis was "reasonably certain" and those in which it was "uncertain." In arriving at this distinction a report is classed as "certain" if the diagnosis was confirmed by microscopical examination of tissues, or by surgical operation, or by autopsy. All cases of internal cancer in which the diagnosis was based on clinical observations alone are classified as "uncertain" regardless of any strength of assertion by the physician that the diagnosis was correct. At the request of the Census Bureau an advisory conference, including representatives of the Harvard Cancer Commission, the George Crocker Special Research Fund of Columbia University, the Barnard Free Skin and Cancer Hospital of St. Louis, the New York State Institute for the Study of Malignant Disease, the Prudential and Metropolitan Life Insurance Companies, the American Association for Cancer Research and the American Society for the Control of Cancer, considered the details of the plan and assisted in the formulation of instructions for editing certificates of deaths from cancer in preparation for the special report. To gather the necessary detailed information the Director of the Census has sent over 35,000 letters of inquiry to physicians who certified deaths from cancer during 1914.

Although a large amount of additional labor has been thrown upon the Division of Vital Statistics of the Census Office by the preparation of this report, it is believed that the trouble and expense will be more than repaid by the result. The improvement of cancer statistics has practical bearings of greater consequence than may at first appear. Indeed, the importance of statistical investigation in arriving at the solution of the cancer problem is likely to be overlooked. Much of the valuable knowledge of the disease which we possess today has resulted from the collection and comparison of statistical data, and this method must be relied upon, side by side with experimental research and clinical observation, to elucidate the baffling problem of the nature and cause of this disease. The publication of this report by the Census Bureau should bring out new and useful information as to the prevalence of the disease in the United States and thereby contribute to the better understanding of its controllable features. Such a study as the Census Bureau is making, if continued, should also throw clearer light on the question of whether or not cancer is really increasing. The foremost authorities have repeatedly urged that this question can be scientifically answered only by studying separately the facts in regard to each of the many forms and sites of malignant disease. The British Imperial Cancer Research Fund has coöperated with the Registrar-General of England and Wales in a thorough analysis of the detailed figures for cancer of the stomach, cancer of the tongue, cancer of the breast, etc., for successive years. By the progressive action of the Director of the Census similar data as to parts of the body affected on which such studies can be made will now become available for the first time in the official statistics of the United States.

The new plan will not only produce data for the year 1914, but every future year a vast amount of information will be recorded and stored away, and can be compiled and published when the demand warrants. Efforts are also being made further to coördinate the work of the state and federal statistical offices for the better registration of deaths from cancer and other diseases as well. By the operation of this plan, and the mutually supplementary efforts of the national and state registration officials, it will be possible permanently to record and study the extensive American data on cancer mortality, with all the detail required by the most exacting statistical methods.

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UNITED STATES DEATH RATES IN 1914.

Report from Washington on December 20, states that the director of the Bureau of the Census, United States Department of Commerce, has recently issued the following preliminary statement of the death rates in the registration area of the United States in 1914. This statement shows for this area a death rate of 13.6 per one thousand of estimated population, the lowest rate hitherto recorded in this country.

"Unfortunately the mortality statistics do not cover the entire United States, since not all communities have adequate death-registration systems. Those states and cities in which the registration of deaths is approximately complete constitute what is known as the registration area. This area comprises 25 states (in one of which, North Carolina, registration is restricted to municipalities which had 1000 population or over in 1900), the District of Columbia, and 32 cities in non-registration states, and contained two-thirds (66.8%) of the total estimated population of the United States in 1914. This represents a very gratifying increase as compared with 1900, when the registration area contained only about two-fifths (40.5%) of the total population of the country. Figures for Kansas are included for the first time in the statistics for 1914.

"There is a widespread and increasing interest throughout the country, especially in the South, in respect to vital statistics. The 'model law' for the registration of births and deaths was put into operation in South Carolina on January 1, 1915, and during the present year this law was enacted in the states of Florida and Illinois. The Bureau of the Census is actively coöperating with officials in other states in order that the entire country may be included at the earliest possible date in the registration area for deaths.

"The total number of deaths recorded in the registration area in 1914 was 898,059, corresponding to a death rate of 13.6 per 1000 population. This rate is the lowest on record, the most favorable year prior to 1914 having been 1912, for which the rate was 13.9.

"The death rate for 1914 is 16% lower than the average for the 5-year period 1901-1905. When due allowance is made for the addition of many new states to the registration area between 1905 and 1914, and the comparison is confined to the registration states as they existed during the period 1901-1905, there still is shown a decided decrease, amounting to 9.4%. In other words, in a typical community in the registration area there were only 10 deaths in 1914 where there were 11 a decade earlier. In the original registration states as they existed in 1901-1905, the population of which is about one-fourth of the total for the United States, the reduction in the rate is equivalent to a saving of about 38,500 lives in 1914. On the assumption that a corresponding reduction in the rate had taken place throughout the entire country, the saving would amount to about 150,000 lives in 1914 for the United States as a whole. This furnishes a statistical measure of the contribution made to civilization by medical science and improved sanitation.

"Among the states for which death rates for 1901-1905 are given, the greatest proportional decrease between that period and 1914 is shown for Rhode Island—17.4%. Next in order are New York, with a decrease of 14%; New Jersey, 11.8%; Massachusetts, 11.4%; Vermont, 7.4%; Connecticut, 3.8%; Indiana, 2.3%; Maine, 1.9%; New Hampshire, 1.8%. Michigan alone showed a slight increase—eight-tenths of 1%.

"Among the cities of 100,000 or over the tendency is toward a still greater reduction in mortality. The following cities show a decrease of 20% or more from the 5-year period 1901-1905 to 1914: Jersey City, 28.5%; New York City, 25.8%; San Francisco, 23.6%; Denver, 23.3%; Newark, N. J., 22.5%; Pittsburgh, 21.9%; Atlanta, 21.8%; Los Angeles, 21.3%; Lowell, Mass., 21.3%; and Paterson, N. J., 20.1%.

"It should be remembered that the rates here given are 'crude' rates, which make no allowance for differences in the sex and age distribution of the population, and that inferences in regard to the relative healthfulness of different states should not, therefore, be drawn without more thorough investigation."

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BENEFIT OF PHYSICAL EXAMINATIONS.

The following letter from a Massachusetts physician on the benefit of physical examinations as suggested by the National Association for the Study and Prevention of Tuberculosis, appeared in the issue of the *Greenfield Gazette and Courier* for December 18, 1915. As a statement of the purpose and value of these examinations for the laity from the standpoint of the profession this letter seems to deserve republication here in full.

"Can I remind your readers in this way that a week was appointed by the National Association for the Study and Prevention of Tuberculosis for each individual to have a general physical examination, and they hope to persuade the majority of persons to make such an examination an annual habit. Your space is too valuable to warrant my taking much of it to give the many reasons why this undertaking should be given serious consideration by every thinking person who has others dependent upon him, and again being a physician, my motives might be questioned, but at the risk of the latter, I offer the following:

"1. Every aggressive business man recognizes the value of a good bookkeeping system, and the need of an annual inventory of his stock. If he does not untilize these aids, he is guessing at his financial condition, and guesswork is disastrous in the complicated business methods of today. If such annual stock taking is good to maintain one's financial condition, how much more important is a working knowledge of our bodily functions? Ignorance of finances means simply a money loss. Ignorance of one's physical condition is often fatal to our maintaining life itself.

"2. The almost universal use of the automobile has brought home to thousands as never before the need of regular inspection of machinery to get and maintain efficient action, and yet there is not a part of the automobile mechanism which is called upon for the sustained work comparable to several of the bodily functions—the heart, lungs and kidneys, for example. When the aeroplane motor was first used, its sudden stopping in mid air was almost invariably fatal to the occupant, but later experience and confidence developed a gliding function, and motor faults are now met in that way; but let the heart stop beating for a full minute and exceedingly serious results soon follow.

"3. It is the common belief that we need not think of illness or death until we are over 60 years of age, and yet reliable figures demonstrate that almost every one who has reached the age of 30 has something the matter with his body which is limiting its efficiency. These defects range all the way from a decayed tooth to unsuspected heart disease. A recent examination of 2000 men and women showed that 70% had more or less serious impairment, while not one of the remaining 30% could be given a clean bill of health. If you are a farmer, you know what it costs in good money to replace a piece of machinery that has not been regularly overhauled and properly housed: if you are a mechanic, you know how difficult it is to do satisfactory work with dull tools; if you are a business man, your ignorance of leaks does not make you a more formidable competitor; if you are a woman, your lack of knowledge of your bodily condition won't check the development of one of the many diseases which you are liable to contract.

"4. You may make up your mind to have a physical examination and ask what information you should require from the examiner. A skillful examiner can in a brief time get your height, weight and body measurements and make intelligent inquiries regarding the working of your special senses and inspect the organs of mastication. He will see if there are evidences of rupture, varicose veins, flat foot, faulty posture, spinal curvature or other deformities, and it wouldn't take long to make a few classical tests to determine the possibility of nervous diseases of the brain or spinal cord, such as paresis or locomotor ataxia. Then he will want to know the working conditions of those organs that receive, digest and assimilate those substances which you take into the body to act as fuel or for its growth, stomach, intestines, liver, etc. Next may come the conditions of those organs whose function it is to remove the waste products of the food, such as kidneys, skin and bladder. Then he will inquire about and test the functions of those important organs which make the blood and distribute the latter to every part of the body—heart, lungs, blood vessels, etc. Finally, there is the condition of the reproductive organs to be ascertained, which cannot be ignored if you discharge your obligation to the race.

"5. The cost of such an examination as above outlined will probably not exceed $5. If it is thoroughly done, it will take the time, skill and judgment of a competent physician, and he will be obliged to use a few expensive instruments of precision. Five dollars will not buy an attractive looking hat for a woman or a serviceable coat for a man, and if you have ever had an automobile overhauled, you know what a sorry figure a $5 bill would make in settlement, and yet that sum invested in a physical examination annually, will pay a big dividend to your 'peace of mind' if you are sound, or be the means of starting an intelligent combat with disease if you are physically impaired.

"These remarks may not arouse you to action or appeal to your judgment, but of one thing we are all agreed, that is, disease is the most democratic of evils, attacking the poor and the rich with the utmost impartiality.

"Yours truly,
"Benjamin P. Croft, M.D.
"Greenfield, Mass., Dec. 8, 1915."

Correspondence.

SURGEON OF THE "MAYFLOWER."

310 Commonwealth Avenue.
Boston, Feb. 1, 1916.

Mr. Editor: In view of the plans now under consideration for the observance of the tercentenary anniversary of the landing of the Pilgrims, the present time seems opportune for the presentation of the claims of the medical profession for recognition of the services rendered by the pioneer physician of this country, Dr. Samuel Fuller. He was a surgeon on board the *Mayflower* and one of the signers of the memorable Compact of November 11, 1620. For many years he was the only physician among the colonists. Prior to the sailing of the *Mayflower*, Dr. Fuller was an influential and important factor among that Scrooby group of Separatists, including Bradford, Brewster, Allerton, Winslow, Standish and others who settled at Leyden in 1609. He was a highly trained physician and was a contemporary of Harvey, then giving to the world the great discovery of the circulation of the blood.

Dr. Fuller's services were not confined to the Pilgrims at Plymouth; he was frequently called to the Puritan settlements, and it was from these visits to the Puritans that a most important turn in the affairs of the colony resulted. It will be recalled that the distrust and hostility of the Puritans, both at Salem and in England, had reached a point when further financial aid to the Pilgrim settlement at Plymouth was to be denied. The missions to England of Winslow, Allerton and Standish, seeking further support and confidence, had failed; the colony seemed destined to follow the fate of the earlier settlement at Jamestown.

At this critical time Governor Endicott requested the professional services of Dr. Fuller for Mrs. Endicott, then ill at Salem. History gives many accounts of the visits of this Pilgrim physician to the Puritan settlement at Salem, and, later, to the settlements at Dorchester and at Boston. All writers agree that the results of these visits were a changed sentiment in England, with an increased confidence in the Plymouth settlement, and an active coöperation at home of men of wealth and position. All this resulted in a greater disposition to emigrate to this country and consequently a rapid and vigorous growth of the colonies which meant the complete success and permanency of the settlements in the new world.

The writings of Bradford, of Endicott, of Winthrop and others all testify that the changed sentiment towards the Pilgrims was due entirely to the professional missions of Dr. Fuller among the Puritans. He remained in the colony and died here, a victim of the small-pox epidemic of 1633. His will was the first one probated in this country and gives many interesting sidelights on the men and doings of that first permanent settlement. The medical profession, especially of Massachusetts, owes it to the memory of this good man, as well as to history, that a suitable recognition of him be requested in any plan adopted for celebrating the anniversary of the landing at Plymouth of Dr. Fuller and his fellow passengers.

Respectfully yours,
Thomas F. Harrington, M.D.

THE SOURCE OF INFLUENZA.

Boston, Jan. 21, 1916.

Mr. Editor:

Permit me to take exceptions once more to the statements recently made in two editorials upon influenza, and more especially to the latter, because therein you advocate a plan which is plainly against reason and nature. Unless it were possible to isolate for many months the thousands of victims of la grippe and prevent their infecting the atmosphere, not only in the Americas but in all the world, the theory advocated cannot possibly be carried into practice. Besides being decidedly dangerous to civilized peoples, the theory of a "contagion ovium" is essentially untenable. There is one disease which is always contact-borne; perhaps another, very rare in a civilized community, leprosy. This disease, although known to be spread by a bacillus, is recognized as an infection, primarily of the rhinopharynx in some quarters.

Influenza is an air-borne infectious disease. It is not epidemic (upon the people) in any city or town until it has been carried thither from some other city or inhabited section of the country where it was epidemic and become endemic (in the people).

Without entering more fully into details, I append these few quotations and suggest a fuller study of the general subject of infectious diseases, with the above 'data' in mind.

"Influenza is independent of hygrometric, thermometric and barometric changes." Greenley, 1890.

"Influenza . . . the micro-organisms are carried high up by the warm currents and are precipitated again to the stratum in which they are effective by the eddies which the cold currents produce."

"Transmission of the disease from person to person is the exception; the dissemination of the disease is accomplished through the atmosphere." "Combe".

"Caused by minute cryptogamic bodies in the air." "J. K. Mitchell, 1850."

Very truly yours,
EDMUND D. SPEAR, M.D.

A REMINISCENCE OF DR. WHITE.

Mr. Editor:

When some years ago Dr. White gave before the Medical Improvement Society a paper upon his professional recollections, and again two years ago published his "Sketches", it seemed to me that a point ought to have been emphasized upon which he was modestly silent.

Now that I am the only person, with the exception of President Eliot, who can do this from a personal recollection, his recent death moves me to recall those characteristic qualities as conspicuous at the time of the reforms in the Harvard Medical School, and indeed in American legislation, as when they later became more widely known to generations of scholars and practitioners.

The reforms in medical education were not entirely the work of the Harvard Medical School, although among the very earliest. They would have come and come soon, for they were "in the air" all around us, but from the beginning they had the heartiest sympathy of Dr. White. It was undoubtedly largely due to the strenuous support given by him to his illustrious classmate that they were so steadily pushed through. The faculty, at that time voting by departments, was by no means a unit, and while, on the whole, recognizing that reform was necessary and was coming, there was left a good deal of conservatism and doubt as to the rapidity with which it was best to move, and there was some strong opposition from important and influential sources.

But Dr. White's tenacity of purpose never wavered and the persistent vigor of his attacks upon the old customs everywhere prevalent never failed.

His deserts in his specialty have been justly recognized at home and abroad, but his services to the cause of sound medical education ought not to be overlooked in a journal which has for so many years advocated that cause in this country.

I am very respectfully yours,
ROBERT A. EDES, M.D.

A GRACIOUS ACKNOWLEDGMENT FROM THE FRONT.

22 GENERAL HOSPITAL
B. E. F.
FRANCE, 14 January, 1916.

To the Editor in Chief,
Boston Medical and Surgical Journal,

Dear sir: As the officer commanding the above mentioned hospital, I am writing to request your kind help in the following circumstances. Many of the members of the first unit (Harvard) were so generous as to send to my care a large number of Christmas presents and tobacco, etc., to their old friends here, the second Harvard unit, and to medical officers and nurses, and in the majority of the parcels there was no indication as to the names of the senders. I am therefore unable to acknowledge personally the receipt of these articles.

I have taken the liberty, therefore, of asking you to be so very kind as to publish in the BOSTON MEDICAL AND SURGICAL JOURNAL a short paragraph expressing the great indebtedness the medical officers and nurses feel towards those gentlemen of the first unit who remembered them so generously, and to thank them most warmly.

I am, dear sir, yours faithfully,
ALLAN PERRY, *Lieutenant Colonel.*

[NOTE. The JOURNAL is most happy to publish Colonel Perry's letter and to call it to the attention, not only of those to whom it is addressed, but also of all its readers, that they may realize the cordial affiliation between members of our profession in safety at home and in the dangers of service in the field.—EDITOR.]

NOTICES.

CHILDREN'S HOSPITAL.—The Visiting Staff of the Children's Hospital will hold a clinical meeting in the amphitheatre of the Hospital on Friday, February 18, at 4.30 P.M. Subject: Exhibition of pathological specimens. Discussion of abdominal and retroperitoneal tuberculosis. The profession is cordially invited.

VOICE CLINIC, PSYCHOPATHIC HOSPITAL.—The sixth "Authors' Evening" of ten papers on Medical Inspection of Speech Disorders in Public Schools, a speech defect program based on a survey of 20 cities, by Walter B. Swift, M.D., in charge, Voice Clinic, and Catherine A. Osborne, M.D., Ph.D., First Assistant, will be given at the Voice Clinic, Psychopathic Hospital, 74 Fenwood Road, Brookline, Mass., February 11, 1916, at 8 P.M.

Introduction. Summary of the Speech Survey, 1. The Need of Medical Inspection of Speech Defects, 2. Disastrous Features of Ill-Trained or Ignorant Speech-teachers, 3. Cases Illustrating Teachers' Care *Sine* Medical Care, 4. Why No Speech Teacher Should Treat Without Medical Advice, 5. Possible Services of a Medical Director of Speech Disorder, 6. The Offices of the School Speech Inspector. Desk. Clinic, 7. Other Services in Education the Speech Specialist Can Render, 8. What The Speech Director Should Do—Hours, Pay, Service, 9. How Teachers Should Use the Medical Speech Director, 10. New Services Expected of the Director in the Lower Grades.

Physicians and medical students invited. If you expect to attend, send a postal to 110 Bay State Road, Boston.

RECENT DEATHS.

DR. GUY HOLBROOK died at his home, 22 Mt. Vernon Street, Boston, January 16, aged 70 years. He was a graduate of the Albany Medical College in 1866 and had practised medicine in Vermont and New Hampshire, and later in Lowell, Mass., where he was an alderman and a member of the Board of Health.

DR. EDWARD SMITH EVELETH, a retired Fellow of the Massachusetts Medical Society, died at his home in East Gloucester, Mass., January 25, aged 74 years. He was a graduate of Phillips Exeter Academy, and of the College of Physicians and Surgeons, Columbia University, in 1866, joining the Massachusetts Medical Society in that year. He was retired in 1908.

DR. ARAPHENA B. DRAKE, who died in South Boston recently, was born in Lincolnsville, Maine, in 1840. She was one of the early women practitioners in this city.

DR. W. ALONZO ELLIS, who died of pneumonia recently in Essex, Mass., was a well known practitioner in that city. He is survived by his widow.